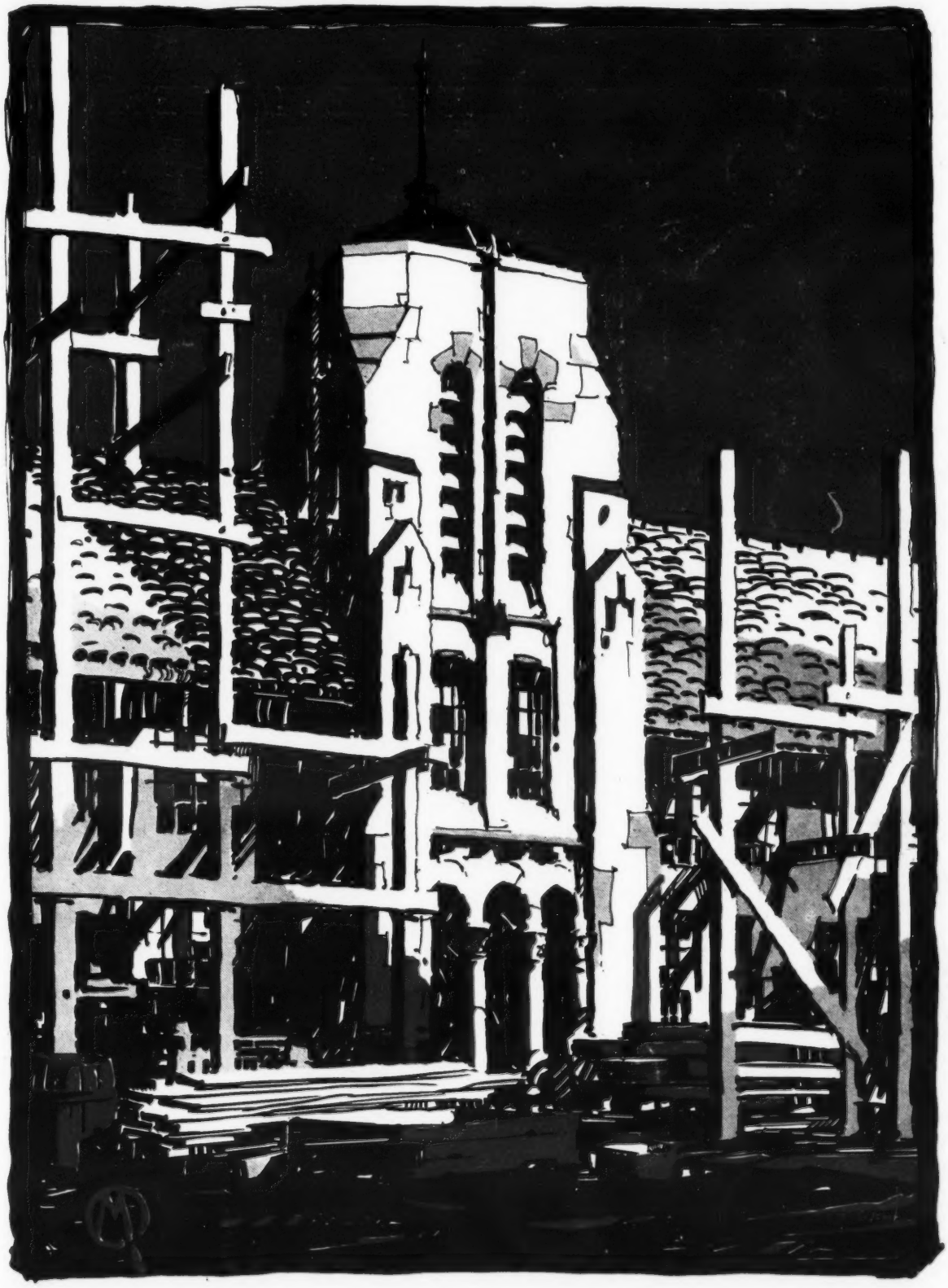
JAN 5 1929

THE AMERICAN
School Board Journal

A PERIODICAL OF SCHOOL ADMINISTRATION



January, 1929

29th ANNUAL SCHOOL BUILDING NUMBER

SINGLE COPIES, ONE DOLLAR

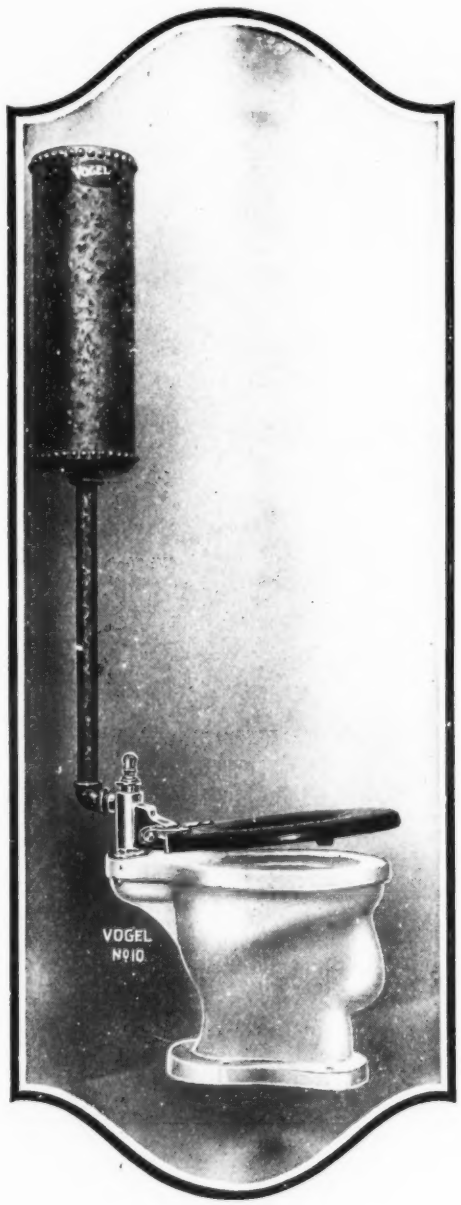
THE BRUCE PUBLISHING COMPANY

CHICAGO MILWAUKEE, WIS. NEW YORK

New VOGEL PATENTED Number TEN

Automatic School Water Closet

DESIGNED TO WITHSTAND THE HARDEST USAGE



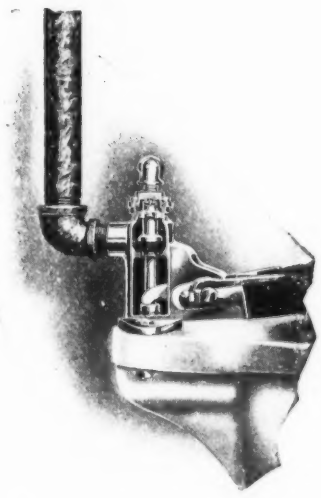
When the closet seat is depressed the supply valve packing is drawn down from the top supply valve seat, and the flush valve packing is brought into contact with the flush valve seat, allowing water to enter the tank through the flush pipe. Upon the pressure of water and air in tank becoming equalized with the service pressure, no more water enters the fixture. This water is held in readiness for the release of the seat.

When the seat is released the rod which carries both supply and flush valve packings is forced upward closing the water supply at the inverted supply valve seat in the swivel at the top. The flush valve, by the same movement, is opened and a strong flush of water from tank to bowl ensues.

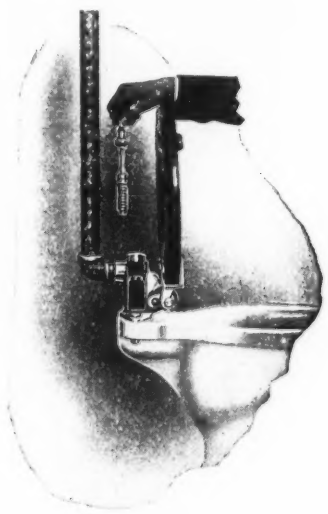
The tank is practically indestructible as is also the flush pipe. The valve is constructed heavily throughout of good quality material and attached to the bowl by a very strong connection. The closet seat is of a durable make and the bowl is of vitreous china.

Economical in the use of water.

The simplest and most durable automatic water closet.



A sample valve was tested 150,000 operations without any appreciable wear



Sold by Wholesalers of Plumbing Supplies Everywhere

JOSEPH A. VOGEL CO.

Wilmington, Delaware **St. Louis, Missouri**

THE AMERICAN
School Board Journal

A PERIODICAL OF SCHOOL ADMINISTRATION

Devoted to the Interests of School Boards, Superintendents,
School Business Officials, and School Architects

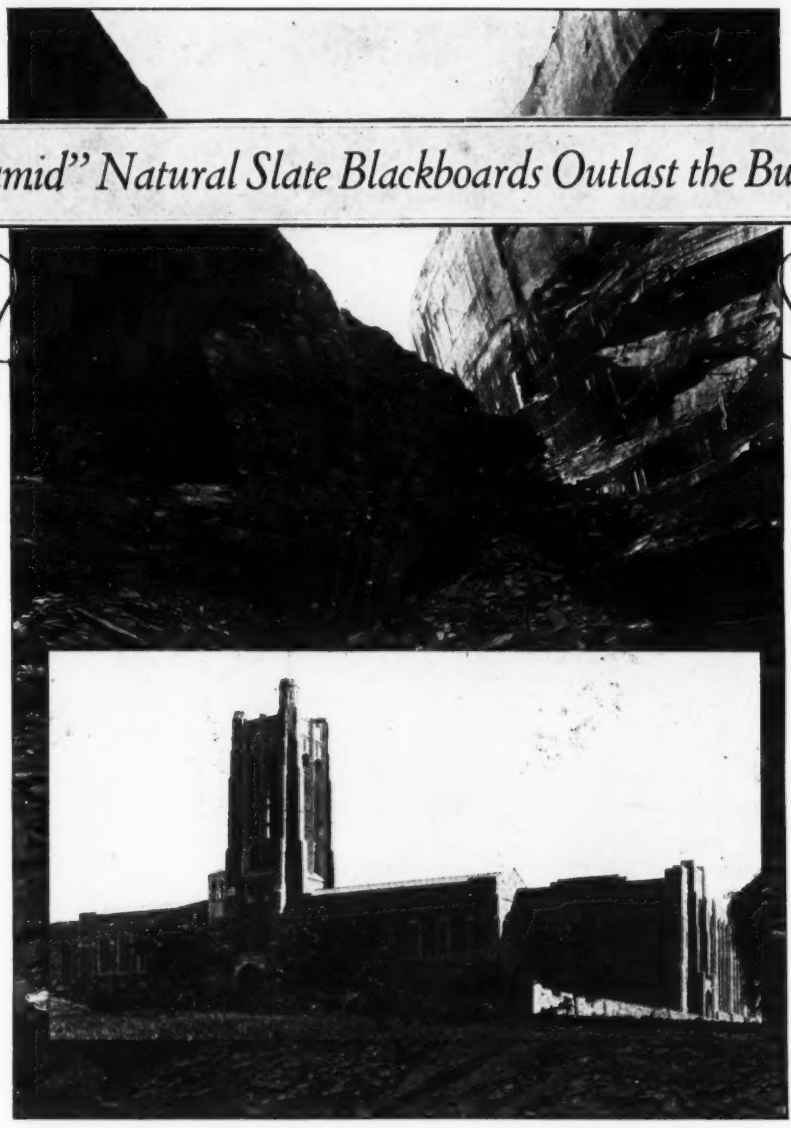


VOLUME 78
JANUARY—JUNE, 1929

THE BRUCE PUBLISHING COMPANY
NEW YORK - MILWAUKEE - CHICAGO

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Printed in the United States of America

Education
Walv



"Pyramid" Natural Slate Blackboards Outlast the Building

Great solid walls, of time defying natural slate, each day give to America's foremost schools the best in blackboards

The Baltimore City College at Baltimore, Md., characteristic of the leading schools of today enjoying the best in blackboards.

SO THAT YOU MAY HAVE THE BEST

{insist on "Pyramid" Quality}

When you buy blackboards what do you expect? Don't you want a blackboard that will give you constant service even after the building has been condemned?

That's the kind of service being rendered today with "*Pyramid*" *Natural Slate* Blackboards.

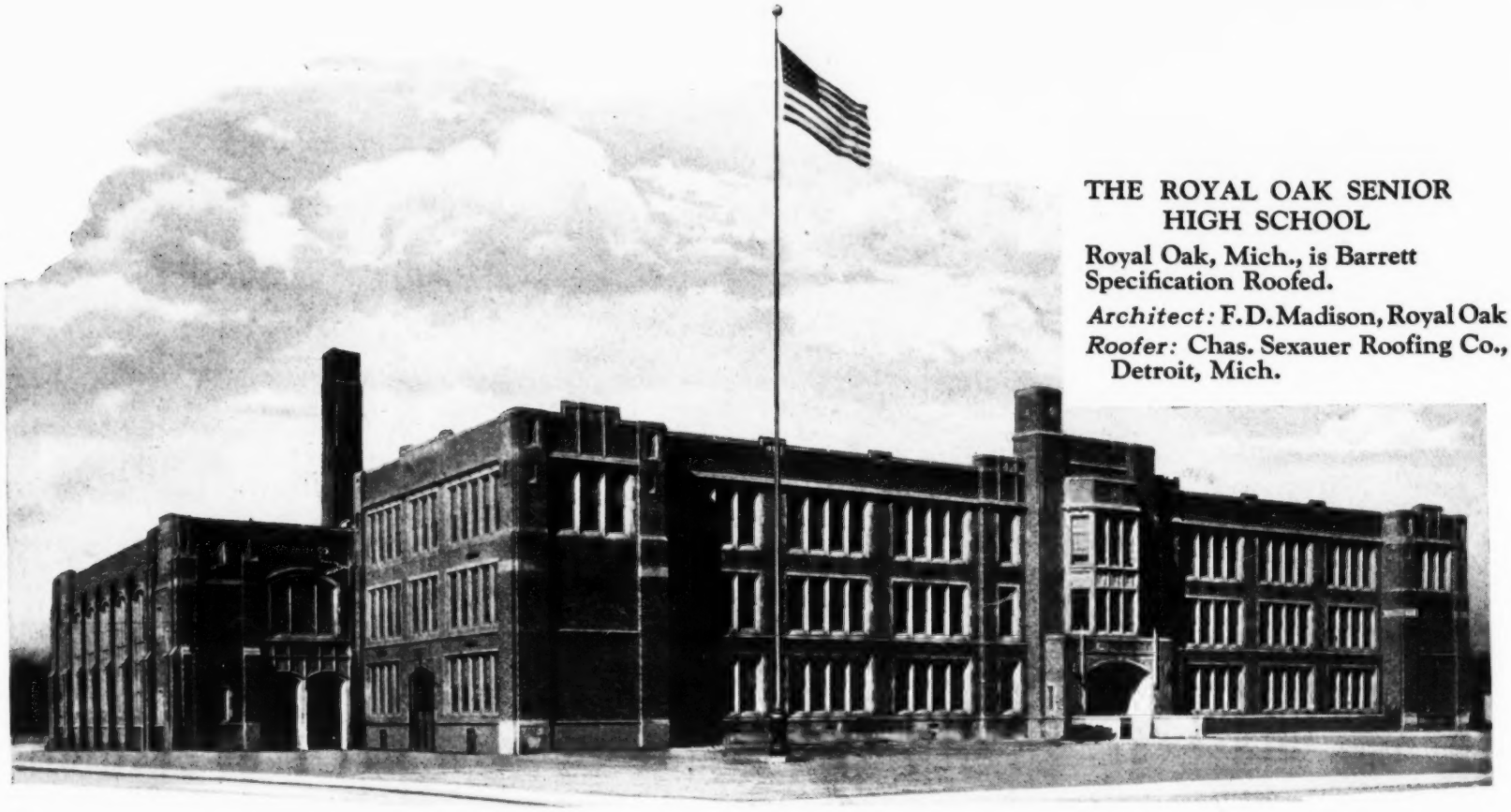
Constant writing, erasing, and washing day after day, year in and year out. Settling building, cracking walls, changing temperatures, these are the tests a board must stand. For centuries, leading schools all over the country have used these blackboards of natural slate, cutting down expensive upkeep.

Rigid and exacting are the tests your board must meet before you receive it. Inspection after inspection from the time this treasure of nature is quarried, insuring you centuries of service so that you may have the best. There is no substitute for this natural blackboard.

Your inquiry for estimates will be given prompt attention. A little book "In the Quarries of 'Pyramid' Slate" is yours for the asking. "Natural Slate for Blackboards," another book giving you all information on this "Pyramid" blackboard, will also be sent gratis.

Natural Slate Blackboard Co.

140 Robinson Avenue, Pen Argyl, Penna.
Branch Offices in all Principal cities



THE ROYAL OAK SENIOR HIGH SCHOOL
Royal Oak, Mich., is Barrett Specification Roofed.
Architect: F.D. Madison, Royal Oak
Roofer: Chas. Sexauer Roofing Co., Detroit, Mich.

ROYAL OAK, *Mich., Pop.* 12,000 roofs 16 schools with BARRETT *in 7½ years*

SIXTEEN times since January, 1921, the school board of thriving Royal Oak, Michigan, has covered new school buildings with Barrett Specification Roofs.

This is both an indication of the enterprise and growth of that alert community of 12,000 souls and a significant tribute to the safety and reliability of Barrett Roofs. Thus, this school board has proclaimed with the convincing emphasis of repeated action, their far-sighted policy, "For our schools, nothing but the best."

There are, of course, thousands of cities and towns in the United States which display the same faith in this famous Barrett Roof. But the very size and character of a town like Royal Oak make their decision in favor of Barrett Specification Roofs all the more pointed and significant. In such a community, school affairs are of intimate concern to everyone. Any action taken by the school board is studied and discussed. Public interest in such matters is sure to be more widespread and more personal than in towns of the metropolitan type. Civic responsibility hits closer to home.

No school board which does its utmost to combine safety for its children with economy for its taxpayers can remain insensible to the 20-year bonded protection* of the Barrett Specification—or the 40-, 50-, and 60-year service records that Coal-Tar Pitch and Felt and Gravel roofs have compiled throughout the country.

Barrett Specification bonded protection guarantees the owner against repair or maintenance expense for the life of the bond. But it's not the 20-year guarantee* that **sells** Barrett. It's the readily accessible facts—available from every quarter—proving that Barrett Roofs **do stand up throughout the years.**

And then there's Barrett proved fire-safety. Fire brands burn out harmlessly on the slag or gravel surface. A Barrett Specification Roof carries the National Fire Underwriters base rating.

What more could be asked of a roof for a school or any other type of flat-roof building? Remember, Barrett Roofs laid a half century or more ago are still keeping the weather on the weather-side!—Still keeping expense off the roof!

*The Barrett Company also offers a Specification Type "A" Roof which is bonded for 10 years. This type of roof is adaptable to a certain class of buildings. The same high-grade materials are used, the only difference being in the quantities.

THE BARRETT COMPANY
40 Rector Street, New York City
IN CANADA:
The Barrett Company, Ltd.
5551 St. Hubert Street, Montreal, Quebec, Canada

Barrett Specification Roofs

KEWANEE

Water Heating GARBAGE BURNERS



Three types—fourteen sizes to heat from 200 to 2600 gallons per hour. Shown is Type A, for heating 200 to 600 gallons.



Great economy is effected because a Kewanee uses garbage and rubbish as part of the necessary fuel. The saving is from 30 to 50 per cent of the fuel cost where an ordinary tank heater is used.

True sanitation is made possible because with a Kewanee all garbage and refuse is burned, on the premises, before it has a chance to decay.

Naturally — being made by Kewanee — they are built of steel, riveted. That guarantees long life with a minimum of repairs.

Catalog No. 75 has the details. Ask for it.

KEWANEE BOILER CORPORATION

Kewanee, Illinois

Branches in 40 principal cities

STEEL HEATING BOILERS RADIATORS WATER HEATERS
TANKS AND WATER HEATING GARBAGE BURNERS



The new Frank M. Bralley Memorial Library at the College of Industrial Arts, Denton, Texas. Henry Cole Knight, architect. The entire roof and all flashings, gutters, and downspouts are of solid Copper.

For Health, Beauty, Long Life and Economy

Use COPPER, BRASS and BRONZE

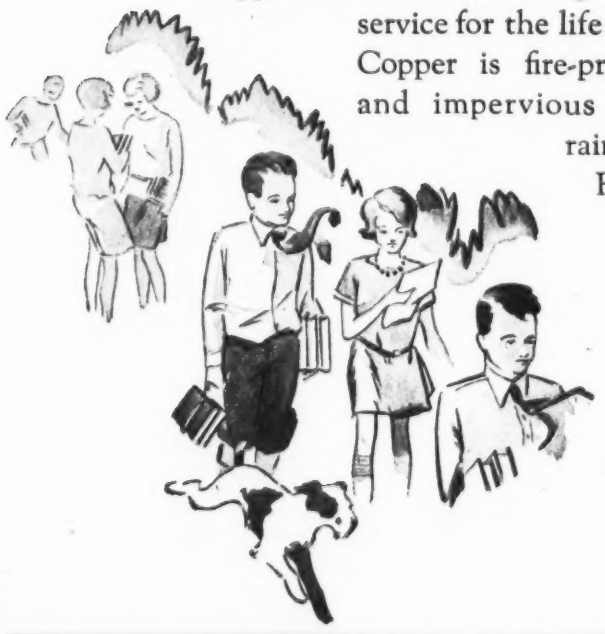
ANY building that is designed to give maximum service at minimum upkeep cost should be rust-proofed with Copper, Brass and Bronze. The leading building authorities and architects of the country are practically unanimous in advising the use of these enduring materials wherever possible in all public buildings.

For all roofing work insist on the use of Copper. Once installed it gives expense-free service for the life of the building. Copper is fire-proof, rust-proof, and impervious alike to sun, rain, snow and fog.

For all plumbing insist on genuine Brass pipe—both as an economy and to safeguard the health of pupils. Brass *cannot* rust. Its use assures a flow of clear, pure water at all times. And it gives lasting immunity from the annoyance and expense of plumbing repairs.

For all hardware and lighting fixtures insist on solid Brass or Bronze. Only these rust-proof metals can stand up under the almost constant handling to which school hardware is subjected.

Our Building Service Department will be glad to work with you on all problems pertaining to the use of Copper, Brass and Bronze.



COPPER & BRASS
RESEARCH ASSOCIATION
25 Broadway, New York City

Midwestern Office
Landreth Building
St. Louis, Mo.

Canadian Office
67 Yonge Street
Toronto, Ont.

Pacific Coast Office
Architects Building
Los Angeles, Cal.

COPPER, BRASS, BRONZE—*The World's Most Useful Metals*



CENTRAL JR. HIGH SCHOOL, KANSAS CITY, MO. . . . . EQUIPPED WITH JOHNSON SYSTEM OF HEAT CONTROL . . . . . CHAS. A. SMITH, ARCHITECT

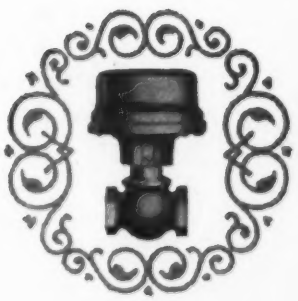
Forty-four years ago The Johnson System Of Temperature Regulation was placed on the market. It was the first successful method of complete temperature control: the introduction of a utility that has proved of infinite benefit to the world and mankind. During these forty-four years practically every improvement in temperature control apparatus and its installation has had its origin with this company: the pacemaker in the progress of the industry, as well as the pioneer. And today, Johnson Heat And Humidity Control remains far in advance and alone in the completeness of heat and humidity regulation: for example, the all metal construction of the Johnson System positively provides for permanency in its operation and constant accuracy in the proper regulation of the heating and ventilating equipment of a building. . . . . .

JOHNSON SERVICE COMPANY, MILWAUKEE
BRANCHES IN ALL PRINCIPAL CITIES.

JOHNSON HEAT AND HUMIDITY CONTROL



THE ALL METAL SYSTEM: THE ALL PERFECT GRADUATED OPERATION OF VALVES AND DAMPERS: THE DUAL THERMOSTAT (NIGHT & DAY) CONTROL —FUEL SAVING, 25 TO 40 PER CENT PER YEAR.



Von Duprin

Self-Releasing Fire Exit Latches

Sweets, Pages B2605-B2609

AIA 27c5

No Von Duprin device, anywhere, has ever failed to operate in an emergency.

VONNEGUT
HARDWARE CO.
Indianapolis, Ind.





1. PUBLIC SERVICE BUILDING, BOSTON, MASS.
Architect: Harold Field Kellogg
General Contractor: Turner Construction Co.

2. ELK'S CLUB HOTEL, BOSTON, MASS.
Architects: McLaughlin & Burr
General Contractor: W. A. & H. A. Root

3. STATLER HOTEL and OFFICE BUILDING BOSTON, MASS.
Architects: George B. Post & Sons
General Contractor: Dwight B. Robinson & Co.

4. HOTEL COPLEY PLAZA, BOSTON, MASS.
Architect: J. H. Hardenburgh

5. CITY HALL, NEWPORT, R. I.
Architects: Appleton & Stearns

6. LYNN HOSPITAL, LYNN, MASS.
Architects: Kendall, Taylor & Co.
General Contractor: Cunningham Construction Company

7. THE HARVARD SCHOOL OF BUSINESS ADMINISTRATION, CAMBRIDGE, MASS.
Architects: McKim, Mead & White
General Contractor: Hegeman Harris Co.

New England Thrift and *Columbia* Window Shades

NEW ENGLAND once fought a war about a not very large tax on tea. And from that day to this, the people of this corner of the country have been famous for their high-spirited hatred of high prices.

Perhaps you've been assuming that *Columbia* Window Shades must be expensive because they are chosen for so many expensive buildings.

Look at the group of splendid New England buildings spread across the top of this page. There is a *Columbia* Window Shade mounted on a *Columbia* Roller at every window.

We consider ourselves good business men—but we are not good enough to induce so many New England business men to buy *Columbia* Window Shades and Rollers if they weren't a big money's worth.



The *Columbia* Mills, Inc.
225 FIFTH AVENUE, NEW YORK

Baltimore Boston Chicago Cincinnati Cleveland Dallas Detroit Fresno Kansas City Los Angeles Minneapolis New Orleans Philadelphia Pittsburgh Portland (Ore.) St. Louis Salt Lake City San Francisco Seattle

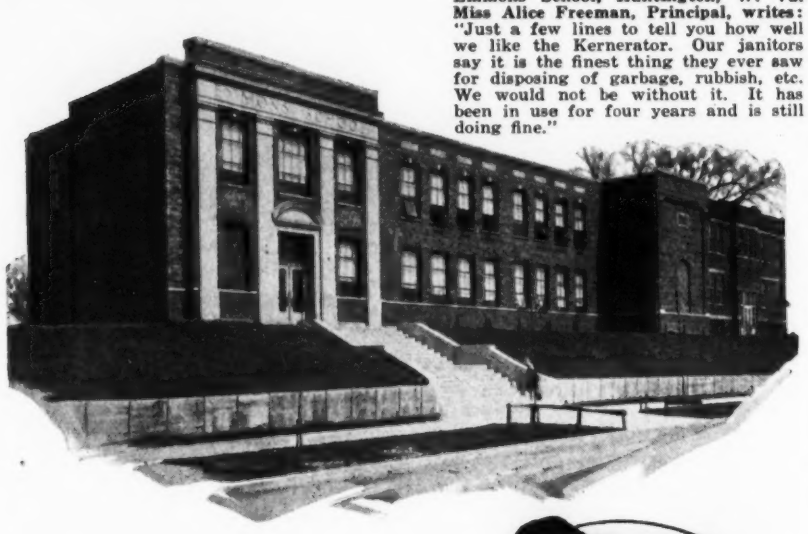
Columbia
GUARANTEED
WINDOW SHADES
and ROLLERS



Send for your Copy of
"Window Shades"

This interesting book tells all about window shades, window shade rollers and roller brackets, approved methods of hanging window shades and suggests the most suitable type of shade for each kind of building. It also contains the useful "Standard Specification for Window Shades." For your copy mail the coupon to *Columbia* Mills, Inc., 225 Fifth Avenue, New York City.

Name.....
Street.....
City..... S 1-29



Emmons School, Huntington, W. Va. Miss Alice Freeman, Principal, writes: "Just a few lines to tell you how well we like the Kernerator. Our janitors say it is the finest thing they ever saw for disposing of garbage, rubbish, etc. We would not be without it. It has been in use for four years and is still doing fine."



Away with Garbage and Rubbish Accumulations in the *Modern* School!

Filthy, insanitary garbage cans and fire hazardous rubbish piles are things of the past when a Kernerator is installed. Garbage, papers, sweepings and refuse of all kinds are simply dropped into handy hopper doors conveniently located on each floor and fall to the combustion chamber in the basement. An occasional lighting burns the air-dried accumulation—no fuel is required.

In many of the country's best known schools, academies and seminaries the Kernerator has solved forever the problem of waste disposal.

Here's What Kernerator Assures:

1. Overcomes the chief cause of 75% of school fires through trash piles in the basement.
2. Banishes the trucking of waste paper and sweepings to the basement.
3. Entirely does away with the expense of buying, cleaning and replacing of garbage cans.
4. Provides for instant disposal of refuse from cafe and cafeteria.
5. Makes it unnecessary for foul-smelling garbage wagons to call for garbage.
6. Provides more sanitary surroundings, and greater health assurance.
7. Costs nothing to operate or maintain—requires no fuel—an occasional match burns the waste and air dried garbage.

There are Kernerator school models as low as $250 and the masonry adds but little more when the regular chimney is used. Send for our new illustrated school booklet which gives valuable information on uses and installation of Kernerator.

KERNER INCINERATOR COMPANY
733 E. Water St., Milwaukee, Wis.

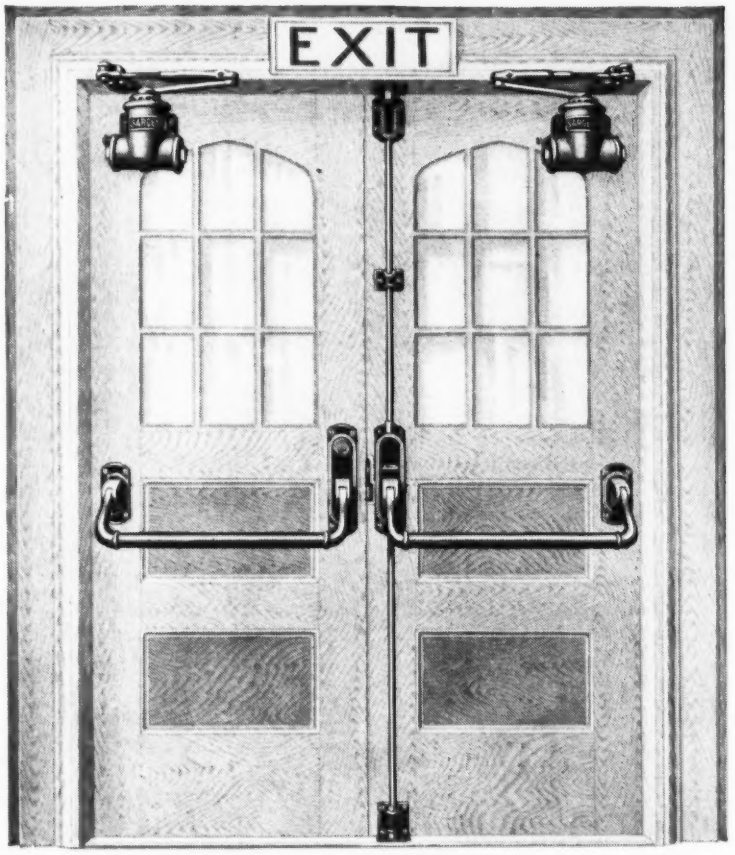
KERNERATOR
REG. U.S. PAT OFF
THE CHIMNEY-FED INCINERATOR

Garbage and Waste Disposal

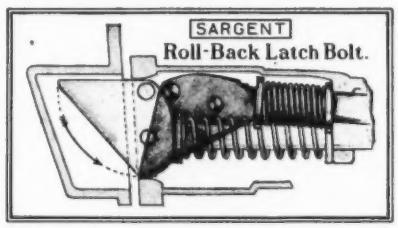


Instant, Sanitary, Costless

A new fire-exit latch bolt that *can't be jammed*



Not even the pressure of a panic-driven crowd can make the Sargent roll-back latch stick



School officials, who are responsible for the protection of the lives of the pupils and are anxious to make proper provision for quick exit in case of fire or panic will be interested in this new development which has become the standard Roll-Back action for

SARGENT

Fire Exit Door Bolts.

The improved action is shown by the detailed drawing. The Cross Bar does not withdraw the bolts, but releases the deadlocking mechanism, allowing the bolts to be rolled back into the case of the lock as the doors are pushed open.

Security.

The Latches provide complete security and prevent entrance from the outside of the building when the school is not in session, while they can be arranged to permit entrance during school hours if desired.

Quick Exit At All Times.

is provided and in case of necessity the doors can be instantly opened by slight pressure on the handle Bars at any point.

Door Closers

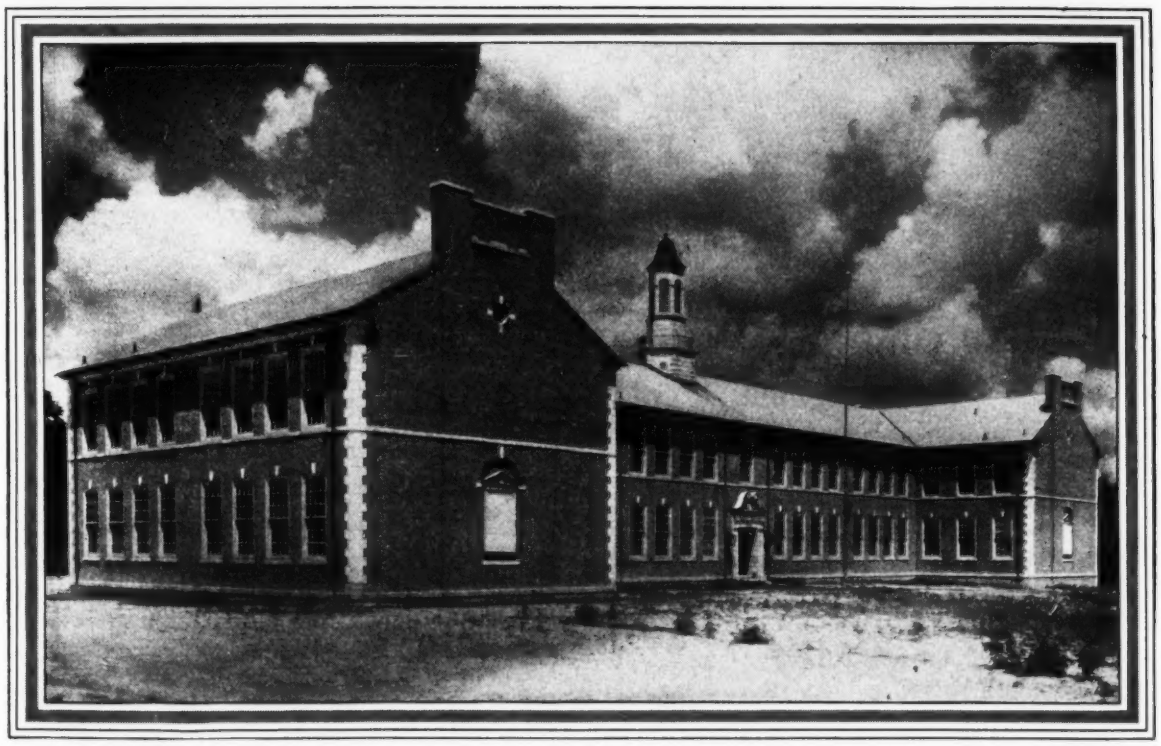
close the doors, during their day by day use, quickly and quietly, the application shown in the illustration with the Sargent special foot (No. 35) being particularly desirable.

Pamphlet illustrating and describing Fire Exit Door Bolts will be mailed upon request.

Sargent Fire Exit Door Bolts, Locks and Hardware are sold by representative dealers in all cities.

SARGENT & COMPANY
Manufacturers
NEW HAVEN, CONN.
New York **Chicago**

150 Pounds Pressure CRANE VALVES 2500 Pounds Pressure



The Perkins Elementary School of Knoxville, Tenn., is one of the new school buildings where both the physical and mental welfare of the students are insured by the installation of Crane plumbing and heating materials throughout. Architects, Barber & McMurray, Knoxville. Plumbing and Heating Contractor, L. P. McAuliffe, Knoxville.

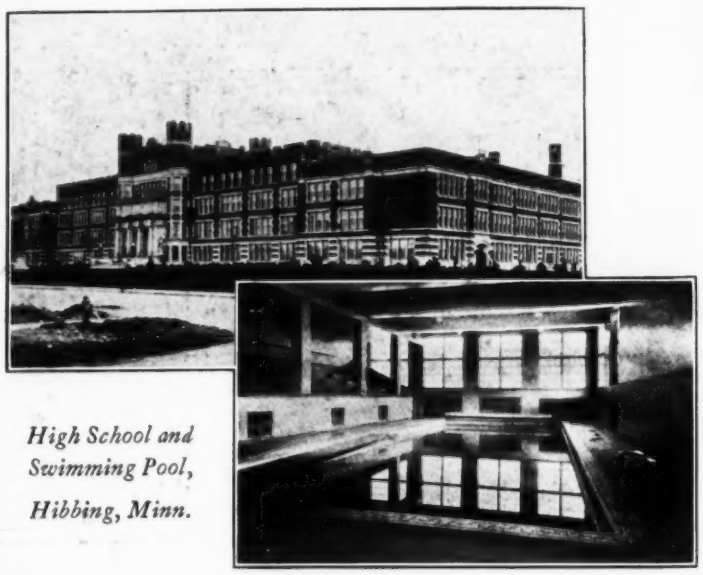
Crystallizing character in the fluid minds of children

Eager and impressionable, the minds of little children are greatly influenced by their surroundings. So it is, that educational experts lay unusual stress on plumbing systems installed in elementary schools. For when fixtures are dignified and beautiful in design, when they are easily kept gleaming and spotless, they serve as an inspiration to children, developing their self respect, teaching them cleanliness.

In the light of these requirements, it is significant that for a convincing number of recently built educational institutions Crane plumbing materials have been selected.

CRANE

GENERAL OFFICES: CRANE BUILDING, 836 S. MICHIGAN AVENUE, CHICAGO
NEW YORK OFFICE: 23 W. 44TH STREET
Branches and Sales Offices in One Hundred and Seventy Cities
National Exhibit Rooms: Chicago, New York, Atlantic City, San Francisco, and Montreal
Works: Chicago, Bridgeport, Birmingham, Chattanooga, Trenton; Montreal, and St. Johns, Quebec; Ipswich, England
CRANE EXPORT CORPORATION: NEW YORK, SAN FRANCISCO, MEXICO CITY, HAVANA
CRANE LIMITED: CRANE BUILDING, 1170 BEAVER HALL SQUARE, MONTREAL
CRANE-BENNETT, LTD., LONDON
CIE CRANE: PARIS, BRUSSELS



High School and Swimming Pool, Hibbing, Minn.

HERE THE STUDENTS "Swim in Drinking Water"

THE health of the students at the magnificent High School at Hibbing, Minn., is protected by the chlorination of every drop of water that enters the swimming pool.

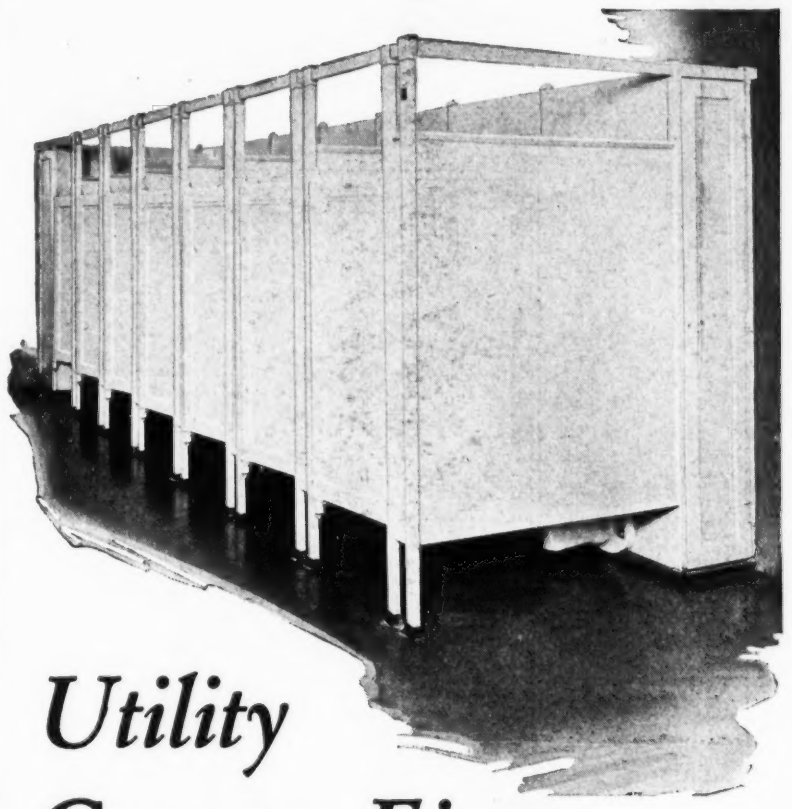
A modern, efficient, recirculating system is installed. The water is continuously pumped from the pool—filtered, heated, sterilized with chlorine and returned to the pool — as pure as drinking water—meeting the most exacting requirements of the supervising health authorities.

—And because the water is chlorinated there is a residual sterilizing action imparted to every drop of water in the pool — thus insuring its hygienic purity at all times.

At hundreds of school pools in North America the students "Swim in Drinking Water"—because the pools are equipped with W & T Chlorine Control Apparatus.

Let us send a copy of our Technical Publication No. 41.

WALLACE & TIERNAN
COMPANY, INCORPORATED
Manufacturers of Chlorine Control Apparatus
NEWARK, NEW JERSEY
NEW YORK CHICAGO KNOXVILLE SAN FRANCISCO MINNEAPOLIS PITTSBURGH DALLAS
KANSAS CITY LOS ANGELES SEATTLE ST. LOUIS BUFFALO HARRISBURG INDIANAPOLIS
DETROIT WALLACE & TIERNAN, LTD., TORONTO, CANADA
WALLACE & TIERNAN, LTD., LONDON, ENGLAND



Utility Comes *First*

THE primary purpose of school building toilet room equipment is sanitation, protection of the health of the hundreds of children who make daily use of the facilities. WEISTEEL compartments have been designed to fulfill this primary purpose. Pleasing lines, to harmonize with and be worthy of the finest architecture, have been given these partitions without sacrificing the easy cleanability, the plain surfaces which make for sanitation.

The material---copper bearing sheet steel---cannot absorb odors, cannot crack, and is highly resistant to corrosion. With reasonable care, it is practically everlasting. Crevices for the lodgment of dirt and germs have been eliminated; even the hardware---hinges, latches, coat hooks, etc.---has been made to withstand the punishment which hardware usually receives in in public and semi-public toilet rooms.

These utility factors make WEISTEEL the most economical compartment you can specify. We know you'll be pleased with their appearance. A request from you will bring complete information about the features which make WEISTEEL the logical choice for school equipment. . . . HENRY WEIS MFG. COMPANY, INC., Elkhart, Indiana.

WEISTEEL

SHOWER STALLS-COMPARTMENTS-CUBICLES



SURE SANITATION

SURE ECONOMY

Two Very Good Reasons Why School Superintendents Choose Clow Madden Automatics

Every school superintendent knows the importance of plumbing and sanitation. He knows closets, stalls, and lavatories *must* be surely sanitary, or dire may be the results. Clow Madden Automatics are built to go a quarter century.

After every use, a flood of water—though not a wasteful portion (economy again) drowns and carries off all smells and filth. *It's automatic.*

The entire bowl receives an equal flush—for Clow bowls have no quirks or turns to shelter and hatch bacteria (sure sanitation).

Record No. 109
In 1912, 12 Clow Madden Automatics were installed. Repairs were practically nothing. Today, after 16 years' service, they are still working perfectly.
Location: Palatine School, Palatine, Illinois.

Simple as A B C the Madden Valve has no diaphragms or counterweights. It has, in fact, only two moving parts — nothing to cause grief. It can't forget to work—it's automatic.

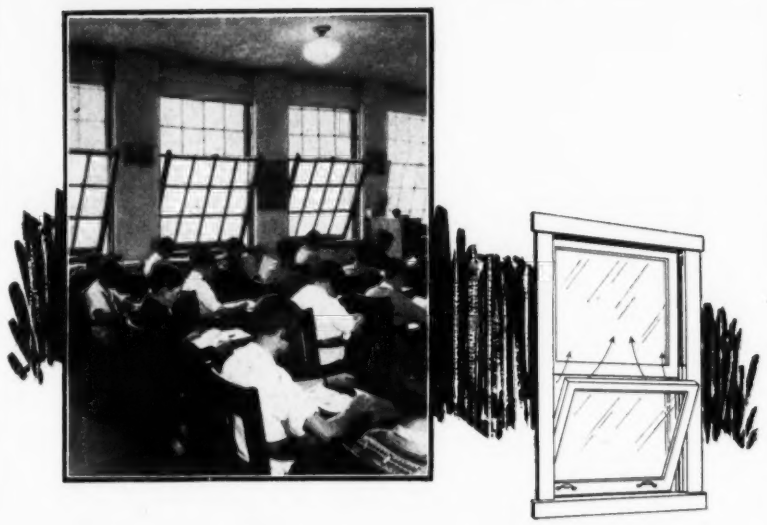
Superintendents can know that school sanitation and economy are *sure* with Clow Madden Automatics and Clow plumbing. (Read record No. 109.)

James B. Clow & Sons, 201-299 N. Talman Avenue, Chicago

CLOW MADDEN AUTOMATIC

Forty-Eight Styles, Heights and Types to Meet Your Requirements

The Shut-In Period



When Keeping Children Alert and Healthy Is A Real Problem

WINTER brings new obligations to those responsible for the education of growing children. The dangers of this shut-in period lie in bad air and drafts . . which can be completely eliminated.

In hundreds of schools Williams Reversible Window Equipment is helping to keep young folks healthy and alert . . . through the proper circulation of fresh air. By permitting either sash to be tilted to any desired angle Williams equipped windows provide an ideal system of ventilation. The air current is deflected upward so that there is no draft.

Facilitates Cleaning

In addition, Williams Equipment makes cleaning ever so much easier. Windows can be completely reversed so that all cleaning is done from inside the room. Regular employees can do the job with ease and therefore more frequently.



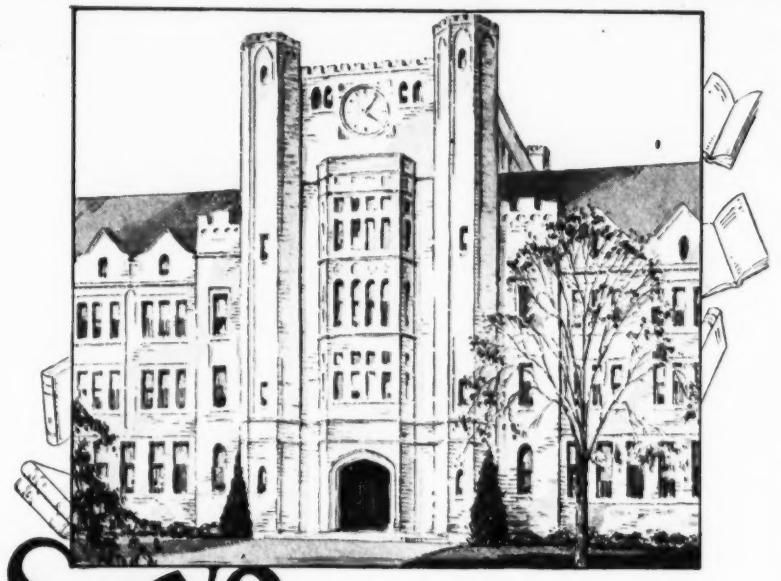
Installations are made by our own factory trained mechanics. We will gladly furnish you with a list of notable schools using Williams ReversibleEquipment.

The Williams Pivot Sash Co.

E. 37th St. at Perkins Avenue Cleveland, Ohio

For 25 years manufacturers and Installers of Reversible Window Equipment.

WILLIAMS REVERSIBLE WINDOW EQUIPMENT



Save on Replacement Costs with Shades of JOANNA CLOTH

rainproof
sunproof
sanitary
cleanable!

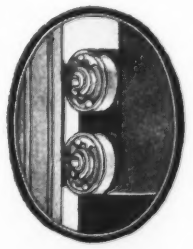
SCHOOL maintenance costs are materially reduced when every window is equipped with shades of the new Joanna Cloth by Stewart Hartshorn. This fine new shade cloth is rainproof, sunproof, dirt-resisting, and cleanable. In fact, Joanna Cloth is practically *wearproof.*

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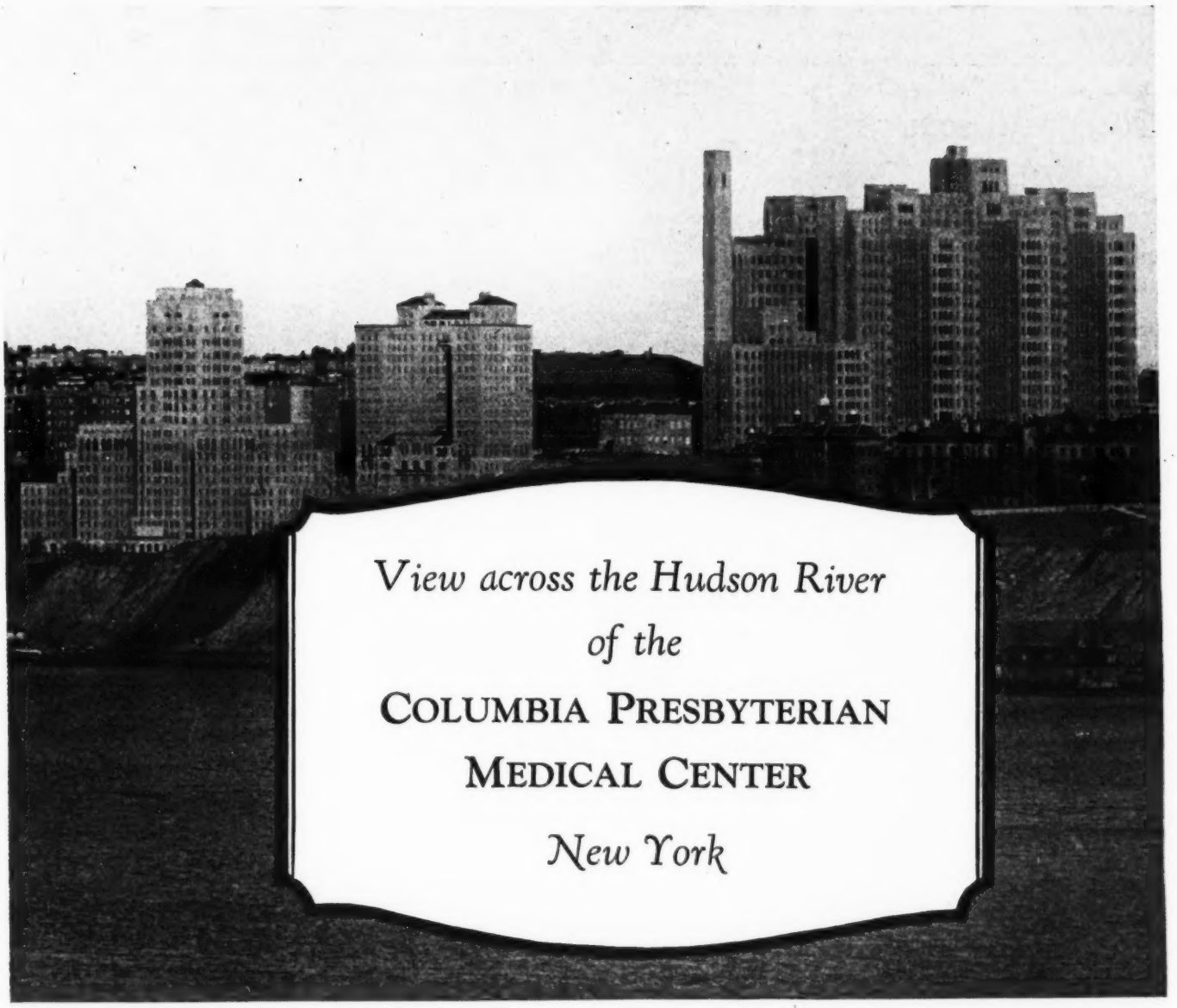
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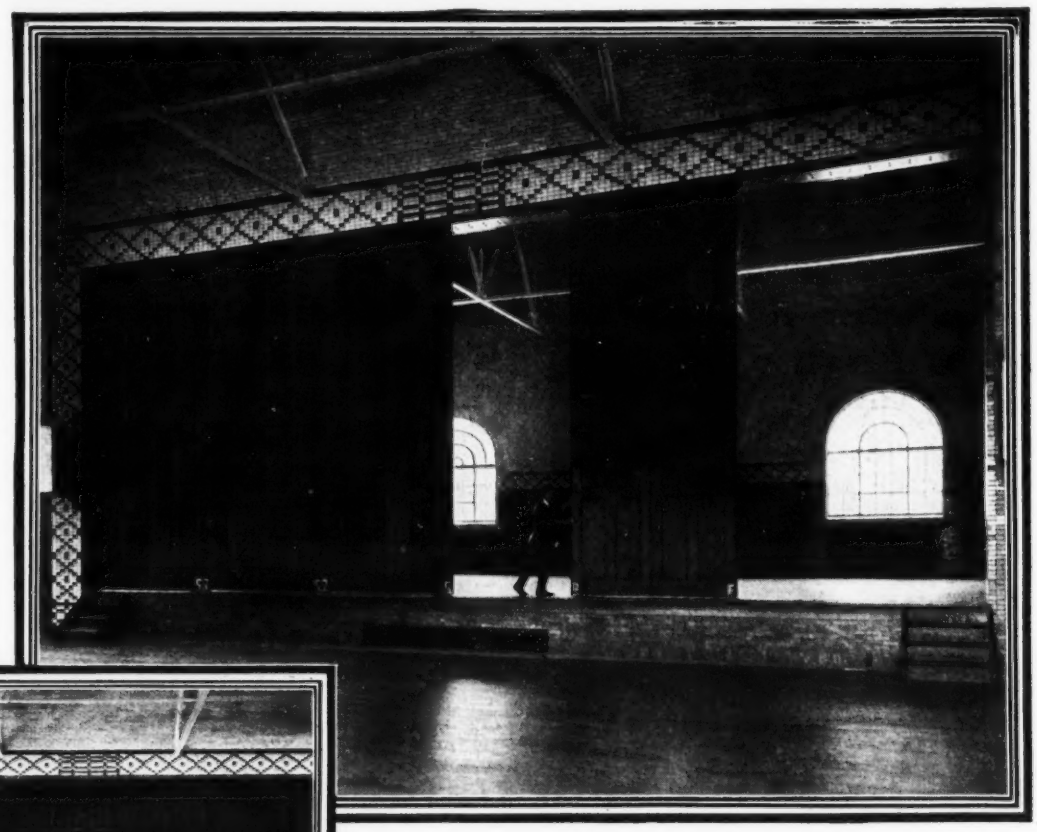
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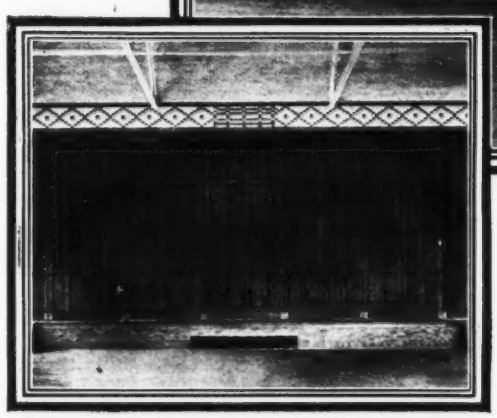
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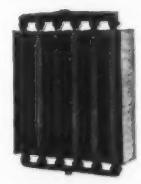
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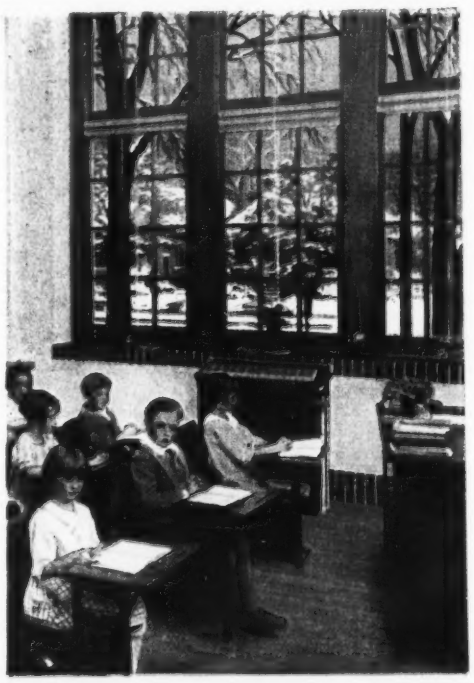
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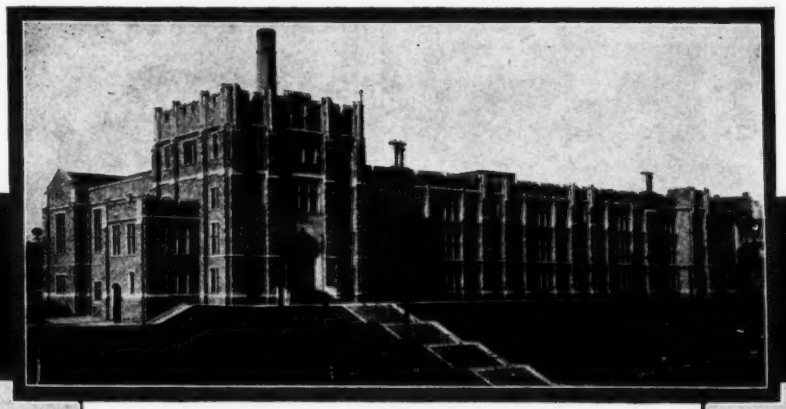
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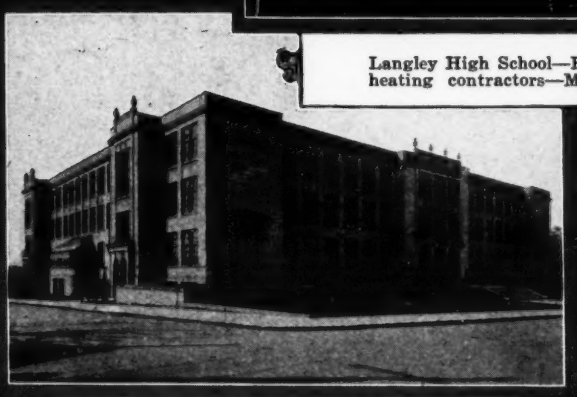
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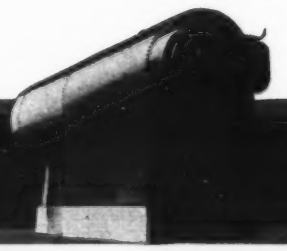
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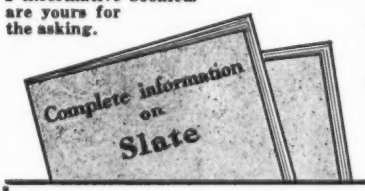
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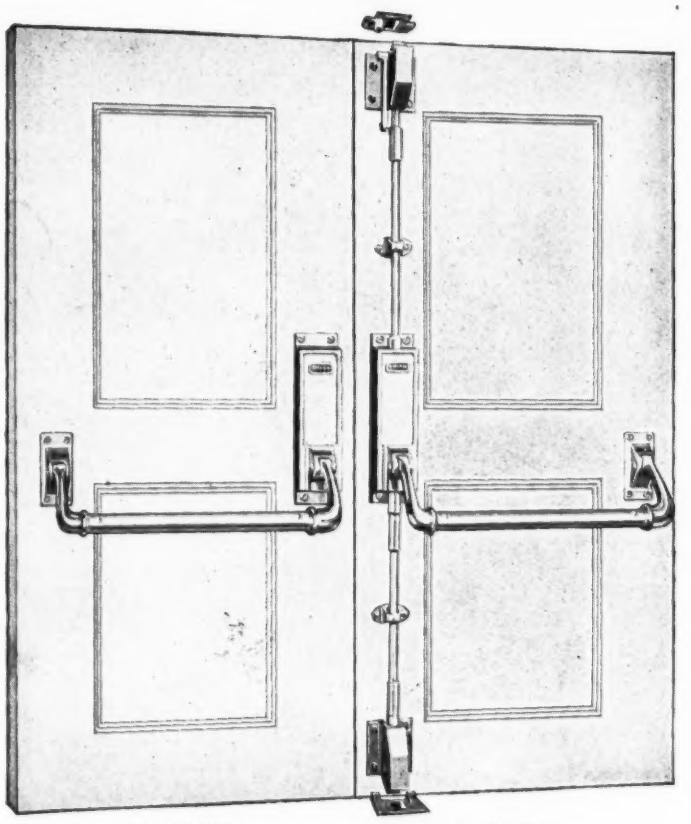
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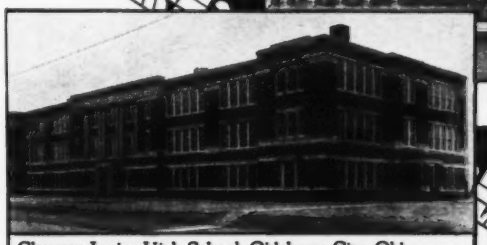
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Our Patented Self-adjusting Device permits adjustment of top at any angle by simply raising top to height desired. When top is raised to vertical position the adjustment ratchet is automatically released and top returns to flat position.



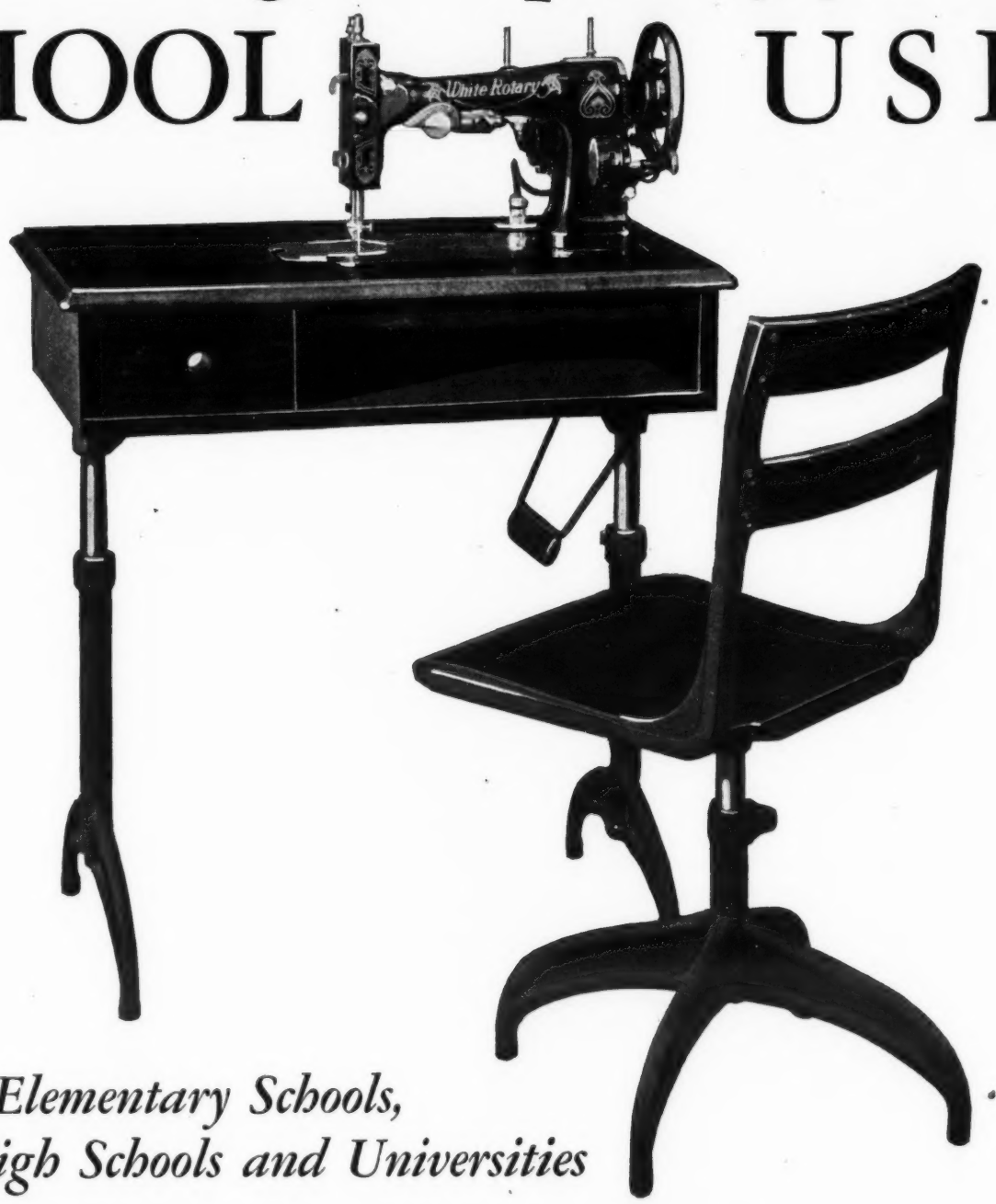
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Some Territory Still Open for DEALERS
Write for Catalog

THE GUNN FURNITURE CO.
Grand Rapids, Michigan

Thirty Years Builders of Office Desks and Tables

A SEWING MACHINE *Designed Especially for* SCHOOL USE!



Ideal for Elementary Schools, High Schools and Universities

YOUR domestic science department, to be more efficient, needs this sturdy and simple new sewing machine, designed especially for schools.

Here it is!—the only sewing machine scientifically planned and built from start to finish for schools · · · new features, new developments. Here are some of them:

1. Extremely simplified operation in every respect.
2. Sitstraight feature · · · Permits the user to sit directly in front of the needle and assuring a correct posture when sewing.
3. *Adjustable to student* · · · chair and machine have easy and positive adjustment lock for raising or lowering to fit the student. Special ferrules · · · movable · · · permits easy rearrangement of machines and chairs.
4. Rotary or round bobbin type of head · · · quiet, vibrationless movement; especially adaptable for electric drive.
5. Especially designed electric motor · · · Built for sewing machine use only. Enables the user to sew as slowly or as fast as she chooses.
6. Simplified knee control · · · permits the user to sew as slowly or as fast as she chooses by merely varying the pressure of the knee on the lever.
7. Sewing light · · · Concentrates the light on the point of sewing so that no glaring effect is apparent.
8. Separate, collapsible cover · · · This Electric Sewing Machine has been designed with the definite requirements of school use in mind. We urge you to consider each of these advantages, bearing in mind why a sewing machine used in schools should be so constructed.

The Theodor Kundtz Company

CHURCH AND ECLIPSE AUDITORIUM SEATING

SCHOOL FURNITURE

Cleveland Ohio, U.S.A.

Distributed by
WHITE SEWING MACHINE CO.
Retail Stores in Principal Cities

Distributed by
THE THEO. KUNDTZ COMPANY
District Offices and Distributors

IMPERIAL DESKS

The Teachers' Choice For The Classroom



If your teachers had the power and opportunity to specify the desks they were to use, what kind do you think they would select? Would they choose a high priced desk because it was good looking? No! They would look for the desk that would give them the best service. And that is where Imperial desks would get the call.

This trade mark is your assurance of consistent good quality and convenient design.

Imperial DESKS for every office use

Look for this mark on all of our desks. It is your guarantee of service.

Imperial desks are quality desks at a moderate price. They are constructed to give a maximum of trouble-free service at a minimum upkeep cost. The exclusive features built into every Imperial are responsible for their long and lasting spick and span appearance. And their faultless design and beautiful finish add to the appearance of the classroom and have made them popular with thousands of teachers throughout the country.



A catalog of our complete line will be sent through our nearest dealer on request. Write for your copy.

IMPERIAL DESK COMPANY
EVANSVILLE, INDIANA

GUNN

LIBRARY FURNITURE, MECHANICAL & ART DRAWING TABLES, TEACHERS' DESKS, CAFETERIA TABLES

Made in Grand Rapids

"The Furniture Capital of the World"

GUNN Furniture is made by experienced craftsmen who have made furniture building their life's vocation. This insures highest quality of construction, cabinet work and finish.



No. 8062
With Inlaid Lino Top

— GUNN SELF-ADJUSTING TOP —
A Special Convenient Feature

Our Patented Self-adjusting Device permits adjustment of top at any angle by simply raising top to height desired. When top is raised to vertical position the adjustment ratchet is automatically released and top returns to flat position.



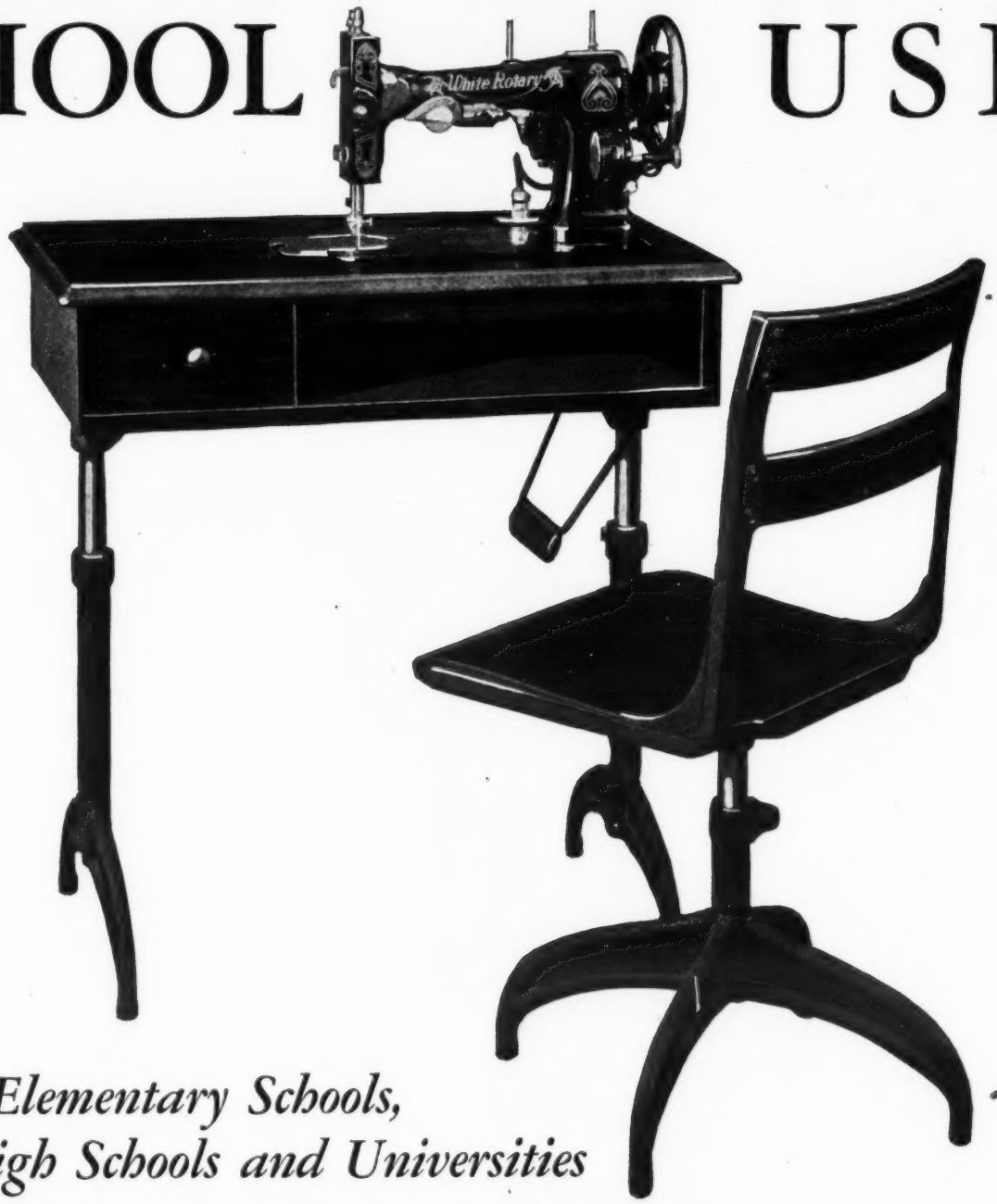
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Here it is!—the only sewing machine scientifically planned and built from start to finish for schools • • • new features, new developments. Here are some of them:

1. Extremely simplified operation in every respect.
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3. *Adjustable to student* • • • chair and machine have easy and positive adjustment lock for raising or lowering to fit the student. Special ferrules • • • movable • • • permits easy rearrangement of machines and chairs.
4. Rotary or round bobbin type of head • • • quiet, vibrationless movement; especially adaptable for electric drive.
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6. Simplified knee control • • • permits the user to sew as slowly or as fast as she chooses by merely varying the pressure of the knee on the lever.
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The Theodor Kundtz Company

CHURCH AND ECLIPSE AUDITORIUM SEATING

SCHOOL FURNITURE

Cleveland Ohio, U.S.A.

Distributed by
WHITE SEWING MACHINE CO.
Retail Stores in Principal Cities

Distributed by
THE THEO. KUNDTZ COMPANY
District Offices and Distributors

Peabody Designs Excel





A Complete School Line

The finest equipment for the finest schools and auditoriums. Such has been the endeavor of Peabody in the design of its complete line of school desks and chairs for every purpose. That we have succeeded is evidenced by the many Peabody installations in schools throughout the country and the modern schools and auditoriums that are now being furnished throughout with Peabody equipment.

Send for the latest Peabody catalog showing our complete line.





THE PEABODY SEATING CO.

Formerly

The Peabody School Furniture Co.

NORTH MANCHESTER INDIANA

EXCLUSIVE VIKING FEATURES



VIKING NO. 500
FOLDS FLAT WITHIN ONE AND ONE-HALF INCHES

STURDY
RIGID
INDESTRUCTIBLE
ECONOMICAL
COMFORTABLE
ATTRACTIVE
COMPACT
BALANCED
QUIET
LOW PRICED



VIKING NO. 1000
FOLDS FLAT WITHIN ONE INCH

A REQUEST FROM YOU WILL BRING COMPLETE INFORMATION ON THE VIKING ALL STEEL INDESTRUCTIBLE FOLDING CHAIRS.

One of the leading educators of the country, having used 2288 Viking folding chairs, since 1925, and having purchased an additional number in 1927, writes us as follows: "We are very much pleased with the quality and the service that the Viking chairs have rendered us. I do not believe there is a chair on the market of equal quality and price."

Furnished with steel and fiber or full upholstered seats.

MAPLE CITY STAMPING CO.

PEORIA, ILLINOIS

Color finishes: Olive Green, Mahogany, and Walnut.

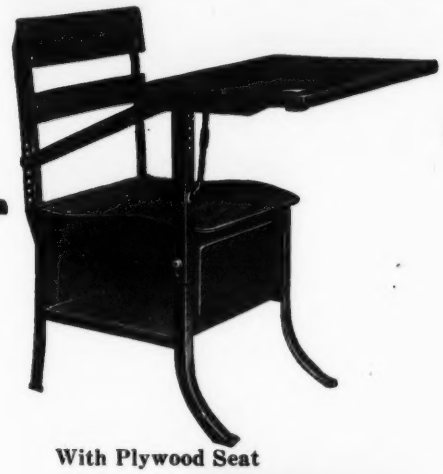
COLUMBIA SANI-STEEL INDESTRUCTO



STANDARD INDESTRUCTO ADJUSTABLE MOVABLE DESK

Seat of standard scroll either plywood or solid at same price. Saddled seat will be furnished on request. Top of standard rectangular pattern with flush top inkwell as shown in sizes 0 to 4. Top is adjustable in height, in tilt, and has an adjustable leveling device. Wood parts are of hard maple, walnut finish. (Oak will be furnished on request.) Seven plywood top, for 20c additional. The steel parts are dark olive green. The feet are shod with gliding domes, or upon request will be equipped with floor fastenings. Steel book box as shown.

No. 330-1 and 2 @ $5.30; No. 333 and 4 @ $5.15; No. 334 and 5 @ $4.90.



With Plywood Seat



COLUMBIA INDESTRUCTO TABLET ARM CHAIR

No. 420

Above is an illustration of the Columbia Indestructo Tablet Arm Chair. The frame is of steel, arc welded to prevent breakage, and is finished in olive green. Back slats are of quartered oak, while the seat and arm are of plain oak or maple. Price of each $4.25; with perforated shelf $.25 extra.



THE COLUMBIA INDESTRUCTO ADJUSTABLE MOVABLE DESK

The top is adjustable in height, in tilt, and has a leveling adjustment not possessed by any other desk. The position of the quartered oak back slats are also adjustable.

Wood parts are of oak, finished dark golden, while the steel frames are finished olive green. These desks may be assembled more quickly and more easily than the combination desks.

No. 400-1 and 2, $4.95; No. 403 and 404, $4.80; No. 405 and 6, $4.65; B Drawer, $1.00. Inkwells with steel swinging holders $0.15
Back panel above bookshelf..... .20

Shipping Weights — Large 34 lbs.; medium 28 lbs.; small 24 lbs.; drawers 7 lbs. 6 and 6; steel shelves 2 lbs; 1½ and 1.



No. 461 tablet arm chair of slightly lighter construction, but amply strong. Price each $3.75.



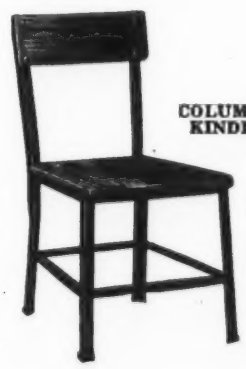
SANI-STEEL INSTRUCTOR'S DESKS

This desk may be had with two drawers at $13.00; four drawers at $17.00; with five drawers at $19.50. It has a steel frame and body that is finished dark olive green. The top and drawers of five-ply built up quartered oak, finished dark golden.



No. 450 TEACHERS' CHAIR

Can be used for Teachers, Visitors, Cafeteria, or the Library. Oak seat and quartered oak back are finished dark golden or brown. Has an olive brown steel frame. Priced at $2.85 each.



COLUMBIA INDESTRUCTO KINDERGARTEN CHAIR

Sturdily constructed with a saddled oak seat and curved quartered oak back and a solid steel frame. Made in three sizes. One dozen weigh 110 lbs. and are priced at $16.00. Also the Elementary Tablet Arm Chair at $21.00 per doz.





No. 65 STEEL BOOK CASE WITH DOORS

Impervious to rats, mice or other vermin as well as fireproof. It will keep your libraries in good condition during vacation months as well as during the school term. The shelves are of wood, for better surface for the books, and are adjustable.

Dimensions: 12 in. deep by 40 in. wide by 55 in. high, each.....$30.00

COLUMBIA SCHOOL SUPPLY COMPANY,
INDIANAPOLIS, INDIANA.



The Union Moveable Desk and Chair

A self-contained unit with its chair always positioned for the work of the pupil.

Its back and seat have always been the guiding star in hygiene. The two-rail type of chair back may be substituted for that illustrated if desired.

The means for adjusting the desk and chair are more simple than any other known device.

The lifting lid has friction hinges to prevent slamming that are absolutely enduring.

The metal parts are of seamless steel tubing and pressed steel welded substantially into one piece.

No other factory has a more complete line of schoolroom seating.

New Jersey School Furniture Co.
(Manufacturers)
Trenton, N. J.

Established August, 1870 — Incorporated March, 1886

STACKS FLAT FOR CONVENIENT STORAGE



No. 44 Swinging Slat Back

Many features developed throughout our years of experience as Folding Chair manufacturers have been incorporated in this model. It folds perfectly flat, is nontipping and will nobly stand up under severe use.

That is one of the main qualifications of the No. 44 Standard Folding Chair. As shown in the illustration to the left it folds perfectly flat. Thus quite a number of chairs can be stacked where previously there were only a few. The resultant economy of space makes it advisable to buy chairs that stack flat.

However, if you desire a chair of finer appearance there is the No. 90 Folding Chair. These chairs can be used any place at any occasion and will enhance the appearance of the room wherever they are used. Although this model does not fold flat it stacks very compactly.

Besides these two there are twelve other distinctive styles of Standard Folding Chairs each answering its purpose nobly whatever the need it is put to.

We are anxious to send fully illustrated literature. Please write.



No. 90 5-Ply Veneer

The folding chair shown above is the pride of the Standard Line. It is very comfortable, strong, neat in appearance and folds very compact. The most critical buyer will find that the construction meets his strictest requirements.

STANDARD MANUFACTURING COMPANY

Cambridge City, 1020 S. Foote St. Indiana, U. S. A.

Important Features Command Your Consideration

Sterling *Lifelong* Blackboard

School officials should give first consideration to Sterling Lifelong Blackboard

BECAUSE in schools and colleges everywhere it has proved itself in actual service to be absolutely dependable.

BECAUSE its highly satisfactory performance makes it an economical purchase and a profitable investment.

BECAUSE in Sterling more distinct advantages are to be found than in any other blackboard. Its jet black, clear, velvety writing surface is easier for pupil and teacher to write upon, easier to read from—erases perfectly. Its body seasons and improves with age. It is warp and buckle proof—strictly fireproof.

BECAUSE with it goes a pledge of your complete satisfaction by this 46-year old concern and by the distributor who sells it to you.

BECAUSE built into it is a quality that only years of experience and ample resources can produce. Back of it is our pride and reputation. To you it means the installation of a blackboard that makes for efficiency of pupil and teacher—and settles best your blackboard problem. Please address Dept. A-S-1 for detailed information.

Fergus Falls High School, Fergus Falls, Minn.,
2415 square feet Sterling Lifelong Blackboard
Architect, Walter R. Dennis



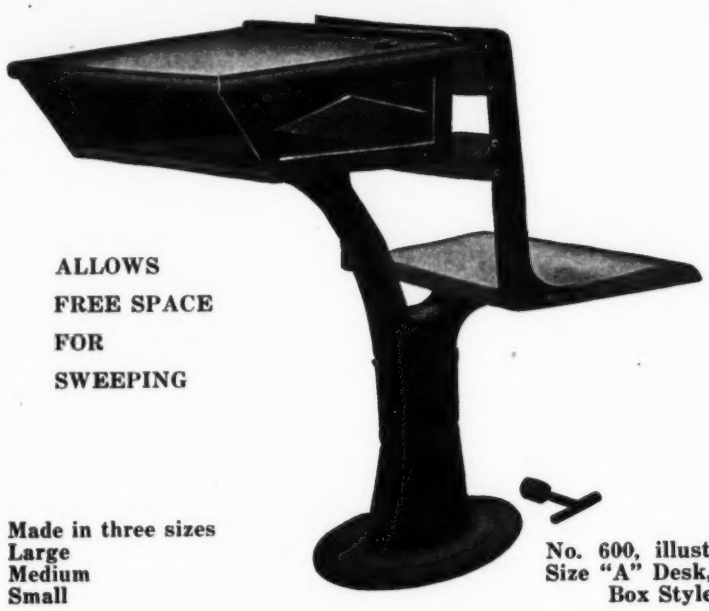
Weber Costello Co.

CHICAGO HEIGHTS ILLINOIS

TIME TESTED W.C. SCHOOL SUPPLIES

Makers of

Sterling Lifelong Blackboard • Old Reliable Hyloplate • Globes • Maps • Erasers • Crayon



ALLOWS
FREE SPACE
FOR
SWEEPING

Made in three sizes
Large
Medium
Small

No. 600, illustrating
Size "A" Desk, Open
Box Style

THE "ARLO"
ADJUSTABLE PEDESTAL DESK

The "Arlo" Adjustable Pedestal Desk is our latest contribution to modern hygienic schoolroom seating. A beautiful desk, both in design and finish, it is absolutely sanitary—exceedingly well adapted to the varying needs of any classroom and guaranteed to withstand the strenuous requirements of every type of classroom service.

The pedestal is made of semi-steel, constructed to give greatest strength at the points of greatest strain. The broad, massive base is cup shaped and when screwed to the floor will never pull loose.

The "Arlo" Adjustable Pedestal Desk will last a lifetime; has steel sides and back and the top is made from maple or birch, finished in Arlo Brown (American Walnut).

Adjustments are simple and easily made. Book box, chair seat are independently adjustable. This is a distinctive feature and makes it possible to adjust "Arlo" desks to meet the individual requirements of each pupil.

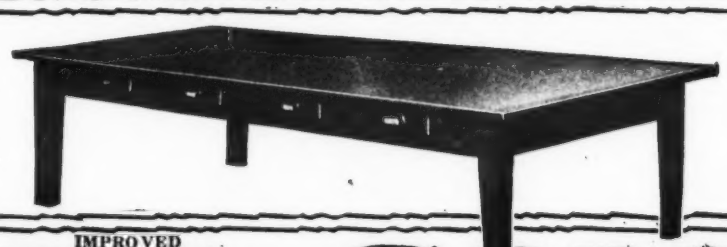
The "Arlo" Line includes The Arlo Adjustable Pedestal Desk with Study Top, The Arlo Non-Adjustable Pedestal Desk, and the Arlo Pedestal Tablet Arm Chair.

Descriptive literature and prices on request.

Flexibility of adjustments assures each pupil being properly fitted, insuring correct posture and real comfort.

Arlington Seating Company

Office and Factory — Arlington Heights, Ill.



IMPROVED
ELGIN
SCHOOL TABLE

Friendly School Rooms

Elgin-equipped schoolrooms are friendly and sociable. The pupils are invariably brighter, less shy, more responsive. The method of "group instruction" possible through the use of Elgin School Tables accounts for this superiority in first and second grades.

Send for booklet, "Seating Efficiency," and see what leading educators say about this modern method.

RINEHIMER BROS. MFG CO.
ELGIN, ILL.

ROYAL
modern
Seating
is supreme



Laboratory
Stool
F.S.1

Guaranteed
10
Years



Pattern No. 32

LABORATORY STOOLS
FOLDING CHAIRS
KINDERGARTEN AND
LUNCH ROOM FURNITURE



Folding Chair No. 128

Royal School Furniture has built an enviable reputation for strength, posture, comfort and finish. Thirty years of experience in the manufacture of Metal Furniture and the designing of seating to meet special requirements is reflected in the superiority of present-day Royal School Furniture.

UNSURPASSED RIGIDITY — The only chair using DOUBLE RIVETED Construction.
OPTIONAL EQUIPMENT—*Drawers — bottom shelf — front, back or side panels—inkwell—wood back-rests—curved or straight front legs.*

Sample sent for FREE TRIAL.
No expense — no obligation.

Royal Metal Manufacturing Co.
METAL FURNITURE SINCE '97
1130 South Michigan — Chicago, Ill.



At a Trifling Increased Cost

By actual measurement, the working space on top of a school desk is increased two and one-half times by the use of this great improvement—the famous

Moeser Extended Arm

Already in use in a great many schools, this has proved to be a remarkable improvement. These advantages have been demonstrated:

—Available working surface more than doubled.

—Full support for the back while writing.

—Arm supported while writing, resulting in better penmanship and less fatigue and nervous strain.

—Correct posture, encouraged by this Arm, insures protection from direct and reflected glare on the eyes.

—No necessity to twist body or incur strain on the spine.

The Moeser Supporting Arm Top can be furnished with any National School Desk.

Choose Your Seating by This 10-Point Test

Years of collaborating with America's leading educators, together with our own exhaustive research and experiments, have resulted in equipment noticeably superior from the viewpoint of these 10 Major Tests for all School Seating.

1. **Health**
2. **Comfort**
3. **Convenience**
4. **Strength**
5. **Durability**
6. **Compactness**
7. **Lasting Finish**
8. **Harmonious Design**
9. **Simplicity**
10. **Sanitation**

If you emphasize each and every one of these Ten Tests, your conclusion inevitably leads you to National — the most modern and scientific School Equipment.

A Wonderful New Finish

A wonderful new finish is now given to all National Desks and Chairs. It is ***permanently water-proof*** and ***practically scratch-proof***. Ordinary school usage makes no impression on this remarkable finish. It gives the wood a richer, deeper color and a velvety feel. This finish is both hard and elastic—also transparent. The wood takes on a soft shade of brown — very pleasing and restful. It will harmonize with any modern interior finish.

We manufacture desks of many designs. Send for our complete Catalog.

The National School Equipment Co., Port Washington, Wis.

Manufacturers of Complete School Equipment

NATIONAL School DESKS

"Famous for Comfort"

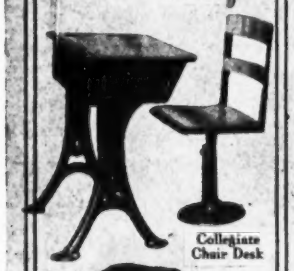
SCHOOL FURNITURE

The Rowles line embodies every practical type of pupil's desk, opera chair, portable assembly chair, tablet armchair, teacher's chair, kindergarten table, kindergarten chair and miscellaneous school furniture obtainable. If you do not have our latest catalog be sure to send for a copy.

For more than thirty years the name of Rowles has been identified with good reliable school equipment. Every article we sell has been correctly designed, properly constructed and thoroughly tested so that the purchaser is assured of full value for every dollar invested. If your School Board contemplates buying new equipment it will be to their interest to obtain a quotation on our line either direct or through a local dealer or distributor.


No. 7724

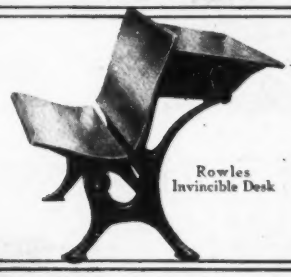

No. FF1243


Collegiate Chair Desk


No. 7722 T.A.


Combination Adjustable Desk


Everfast Pedestal Desk


Rowles Invincible Desk


Sanford Model X


No. 7730


No. 106X


Chicago Pedestal Desk

E:W.A.ROWLES CO.

2345-2351 South La Salle Street
CHICAGO ILLINOIS

Dealers - Write for Agency; some Good Territory still open

MANUAL TRAINING BENCH No. 280



A GLANCE AT THIS NEW PATTERN will show that the combination of various sized drawers and cupboard makes an unusually practical bench. Notice, especially, the small drawer which is intended to hold nails, screws, small tools, etc., which so easily become misplaced when kept with the larger tools. Being able to immediately lay hands on these small but necessary items, will be the means of saving a great deal of time, thereby promoting efficiency. Also, notice the large cupboard, which will hold such tools and materials which cannot be kept in the general or three private drawers. Bench is equipped with our Abernathy Rapid Acting Roller Nut Vise No. 70D on front, adjustable stop and dog.

C. CHRISTIANSEN

Manufacturer of this line since 1898

2814-2842 West 26th St., Chicago, Ill.

SQUIRES INKWELLS

Squires No. 59 Boston Inkwell



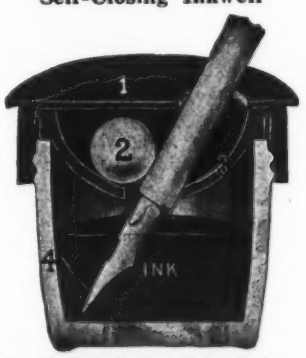
We make the Boston Inkwell with three different styles of tops and three styles of glasses, all interchangeable. They fit a 1-27/32 inch hole.

Squires No. 12 Common Sense Inkwell



Our No. 12 or Common Sense Inkwell is made in three sizes, to fit holes 1½", 1¾" or 1⅞". Corks with Caps or Rubber Corks furnished as desired.

Squires No. 14 Self-Closing Inkwell



No. 14 Self-Closing Inkwell has a Hard Rubber Top and fits a 2 inch hole. It is the best inkwell on the market.

Squires No. 3 or Chicago Inkwell



We furnish a one-lug or a three lug glass for this inkwell which fits a 1-27/32 inch hole. Nickel Plated.

Write for Catalogue, Prices and Samples.

SQUIRES INKWELL COMPANY

Brady Bldg., Third Ave. and Ross St., Pittsburgh, Pa.



Steel Folding Chairs

Specially Adapted for School Purposes

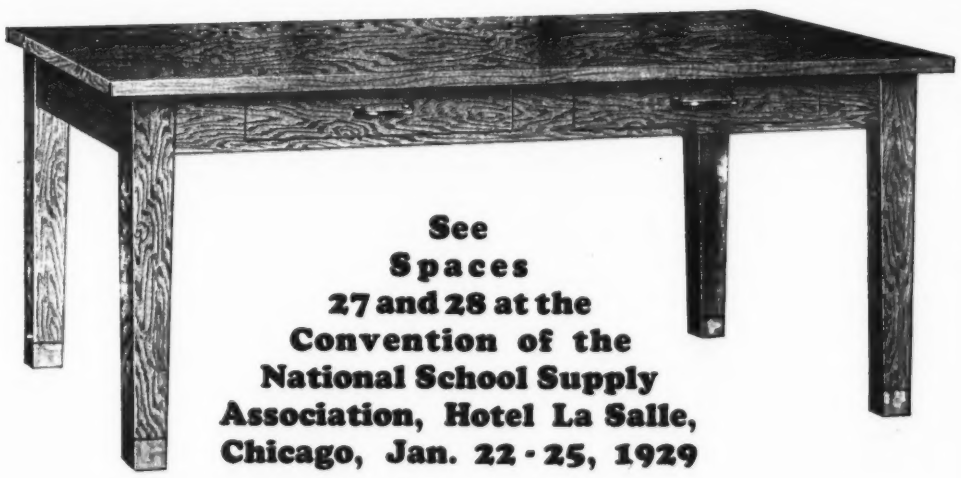
Frames furnished in any color finish. Seats are of wood or upholstered in imitation leather in various colors.

See our exhibit in spaces 27 and 28 at the convention of the National School Supply Association at the Hotel La Salle, Chicago, January 22-25, 1929

WARK-BEACON STEEL FURNITURE CO.

1410 So. Wabash Ave., Chicago

Algoma tables



We manufacture tables of all descriptions for public usage

See Spaces 27 and 28 at the Convention of the National School Supply Association, Hotel La Salle, Chicago, Jan. 22-25, 1929

Office tables, Patented Folding tables and Dining tables made in sizes desired. Cafeteria tables furnished with Rubber, Linoleum, Formica, Vitrolite or Wood tops.

Algoma Wood Products Co.

Factory at Algoma, Wis.

Wm. H. Wark, Sales Agent

1410 So. Wabash Ave., Chicago

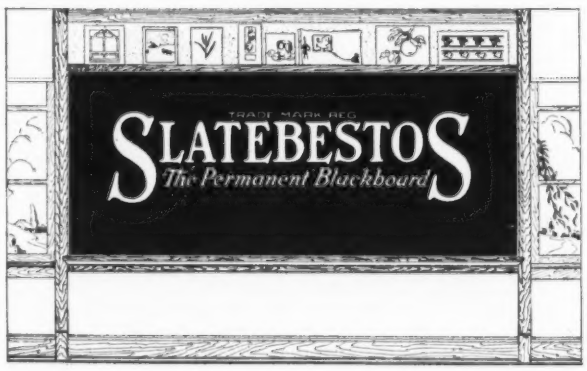
SLATEBESTOS BLACKBOARDS

Now — — — And Twenty Years Later



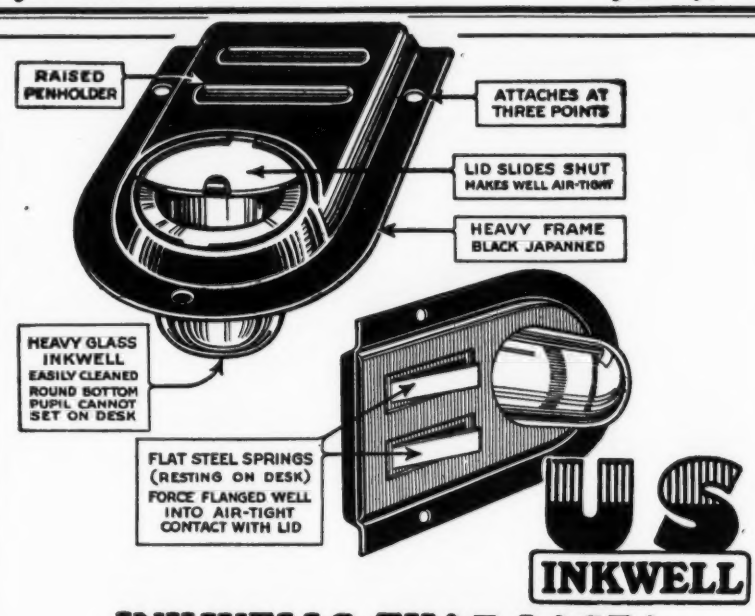
IN THAT NEW SCHOOL— you will install blackboards

They will certainly look fine. But how will they look twenty years from now; will they still have that dark, slate-like, velvety smooth surface? If they are Slatebestos they will. Because Slatebestos has a dark slate color clear through, is built to last the lifetime of your school building, and it **actually improves with age.**



Slatoplate and Slaterock blackboards, each supreme in its class, are also manufactured by us.
Send for sample.

Beckley - Cardy Co.
Manufacturers of Blackboards and School Equipment
17 East 23rd St. Chicago, Ill.



INKWELLS THAT LAST!

HUNDREDS more school boards every year are standardizing on U. S. Inkwells for replacements as well as standard equipment. They know from experience that this inkwell costs little, works well, and outlasts two or more ordinary inkwells.

The U. S. Inkwell is dustproof and noiseless. It does not tempt pupils to waste time.

U. S. Inkwells can pass your most rigid examination. Check the answers to these questions:

1. ***Is it easy to install?***
   Yes, just drive in three tacks.
2. ***Will it fit our desks?***
   Yes, it fits desks of any size. (Made in two sizes—Sr., Jr.)
3. ***Is it quiet?***
   Yes, the lid does not rattle nor creak.
4. ***Is it economical?***
   Yes, because of low purchase cost and unusually long life.
5. ***Has it any special advantages?***
   Yes, the tight-fitting lid keeps out dust and prevents evaporation. Pupils cannot tinker with it as easily as with the average desk well.

SEND FOR FREE SAMPLES TODAY
U. S. Inkwells are made and furnished with two size wells, one twice larger than the other. Write for samples of each so that you can see why it is much worth while to specify U. S. Inkwells—and determine which size best meets the needs of your school. You can get U. S. Inkwells from any school supply jobber or direct from our factory. Write today for prices and samples.

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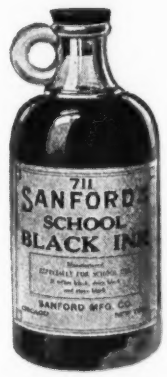


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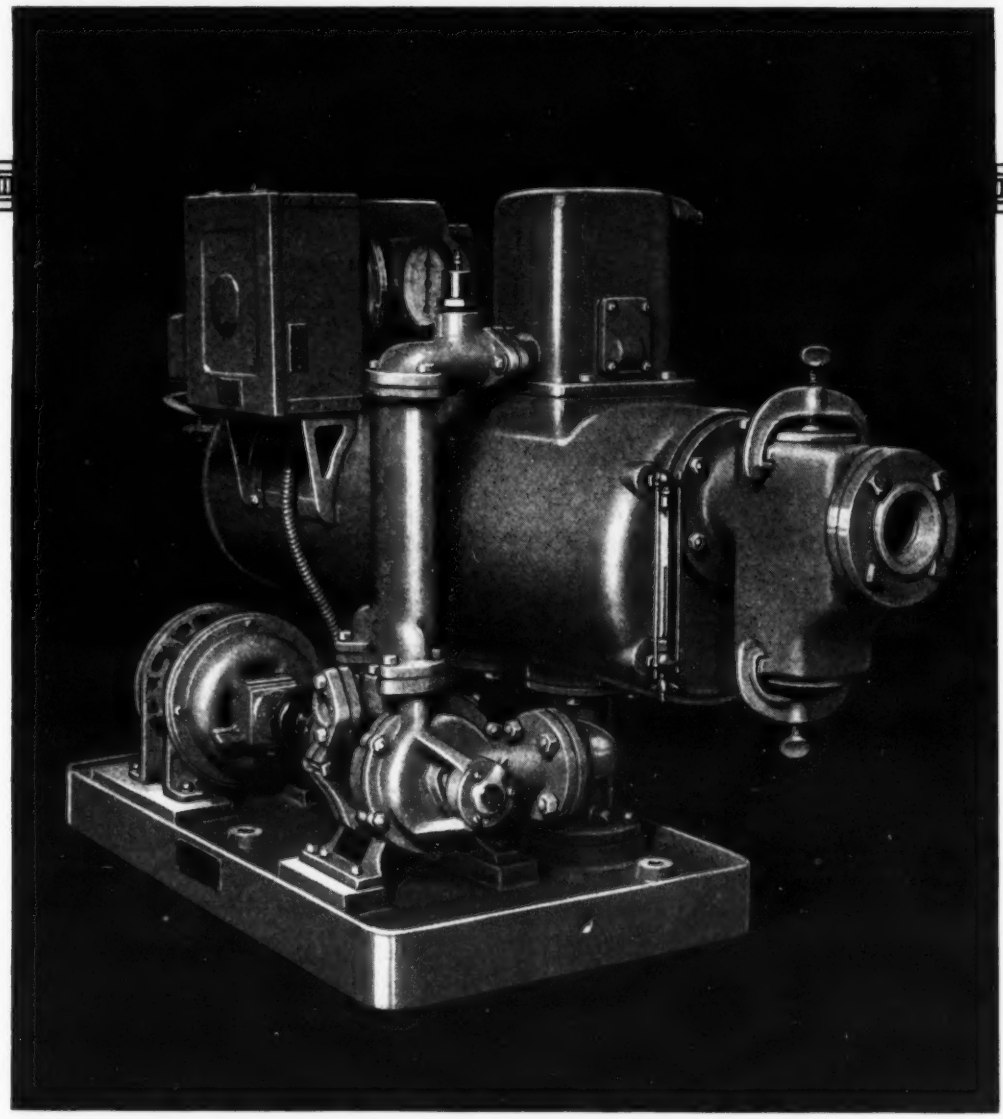
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The Measure of Progress

The material progress of the nation is told ever so often in stupendous figures—billions earned, and awaiting reinvestment—in the rearing of wonderful structures and the apparent prosperity of the masses.

Thus, the material progress of a country may be measured in bank deposits, skyscrapers, new bridges, roads and dams, from whatever viewpoint we happen to make our observations.

Our own viewpoint prompts us to see the nation's progress in terms of new schoolhouses—number, size, quality—that are erected each year. After the World War, the United States found itself woefully short of schoolhousing. It began to build at the rate of from three to four hundred million dollars' worth a year. In a few years, it was believed we would be all caught up.

That was a mistaken notion. The demand for more schoolhousing has continued year after year. Cities, villages, and rural districts are constantly rearing new school structures—the best the world has known. An increased school population naturally demands more housing, but the pride and prosperity of the community call for more stately structures, more elaborate equipment and spacious school grounds.

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An examination of the following pages, noting the remarkable achievements in the field of school architecture, will readily suggest the nation's progress from the educational viewpoint.—The Publisher.

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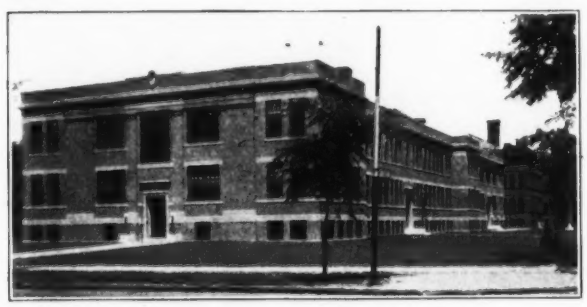
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THE AMERICAN
School Board Journal

Founded March, 1891, by WILLIAM GEORGE BRUCE

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Principles Underlying the Organization of a School Building

Homer W. Anderson, Deputy Superintendent of Schools, Denver, Colo.

Several fundamental principles underlying the planning and organization of the school building have been fairly well developed. A few of these have been in use for several years and have come to be recognized almost universally. Others have received practically no attention or may, in isolated cases, have been applied rather haphazardly or accidentally. The principles may be classified into two great divisions:

I. Those which have gained extended recognition are (1) expansibility, (2) flexibility, (3) economy.

II. Those which have been less universally applied may be called (4) adaptability, (5) accessibility, (6) orientation, (7) noninterference, (8) association.

It is the purpose of this paper to define, explain, and show the application of the above named principles to school buildings.

I. Principles Used Extensively

1. *Expansibility.* This principle has been almost universally applied in school buildings erected during the past decade. However, we find now and then a building in which it has failed to get adequate consideration. The application of this principle provides that the building be so planned that it can be extended and added to with ease and economy. Even if a building is built as an expected complete unit, outlets for extensions should not be entirely lacking. It should always be possible to add to the building. Experience has shown that in growing communities it is almost impossible to determine what the future needs of the building will be. Therefore, it is important to always keep in mind that the floor plans of the building should be so designed that extensions may be provided if necessary at any future time. The initial cost of a building so planned will not be greater than one not so planned, but a saving of thousands of dollars may result at a future date when it becomes necessary to add to the building.

2. *Flexibility.* In a new building, this principle is important because its application makes it possible to alter the building to meet the needs of a changed school program. If alterations in interior arrangements are to be made, it is necessary that the exterior and corridor walls carry the superstructure and that the corridor walls carry all the necessary ducts and flues. In older buildings the walls are usually carrying walls, and practically all walls contain flues and ducts. In such a building it is impossible or very difficult and almost prohibitive in expense to change or remove partitions to make the building fit the new school needs. In the new type where only the exterior and corridor walls carry both the superstructure and the flues and vents, the partitions between classrooms can be easily removed and the organization of the building entirely altered to meet the changes in the educational program. This type of construction is probably no more expensive than the old.

Economy of Space and Materials

3. *Economy.* A committee of the National Education Association[1] has made extensive studies of the relationship of instructional area to the entire floor area of the building. According to these studies, an economical building devotes at least 50 per cent of its floor area to instructional activities. This committee set up the following standards of distribution of floor space which they have called "the candle of efficiency."

Walls and partitions	Not over 10 per cent
Flues	Not over 3 per cent
Stairs and corridors	Not over 20 per cent
Accessories	Not over 1 per cent
Instruction	Not less than 50 per cent
Administration	Not over 16 per cent

Another provision which makes for economy is that of centralizing or stacking plumbing so far as possible. If the reader will notice the location of toilets in the accompanying East High School floor plans and the location of the science department with biology on the first floor, physics on the second, and chemistry on the third, he will see that all of the important and extensive plumbing has been stacked, and the number and length of plumbing lines thereby reduced.

The selection of materials which go into the school building is another important consideration in schoolhouse construction. The type of construction is also important. Fireproof buildings are more expensive to erect, but possibly easier to maintain, than non fireproof buildings. Basements are usually wasteful and uneconomical. Sloping tile roofs cost more than flat roofs.

II. The Less-Used Principles

While the above named principles are important, they deal almost entirely with the mere mechanical features of a school building. They take little or no account of the type of program to be carried on in the building. There are certain principles which are basic to good school-building planning and organization which have not been so clearly stated or so definitely applied. These principles have to do mainly with the school organization which is to operate in the building, and take into account the schedule of classes, the school activities, the needs of pupils, teachers, and subjects, and to a lesser degree the community uses of the building. The remainder of this paper will consist of a discussion of these principles.

4. *Adaptability.* This principle is so called because it takes into consideration the adaptation of the school building to the school program. This is probably the fundamental principle underlying the organization of any school building, especially the secondary-school building, on account of the greater complexity and size of the school organization and the larger number of subjects taught. It is also more difficult to adapt the secondary-school building to the program. Likewise it is more difficult to evaluate the secondary-school program in terms of building requirements. Packer made an excellent study of this problem in his little volume on *Housing High-School Programs.* In this study[2] he has prepared a method which has been reduced to a formula for the interpretation of a secondary-school program in terms of high-school-building needs. In addition to giving a method for determining the schoolroom requirements of the school program, he points out that special rooms such as science, home-economics and commercial laboratories, and shops should be so equipped that more than one activity can be carried on with the facilities provided in these laboratories and shops. In other words, he emphasizes the multiplicity of use in order to assist in adapting the high-school building more thoroughly to the school program. It is easy to see that the multiple use of school facilities as enunciated by Packer has tremendous bearing on the principle of economy as outlined above.

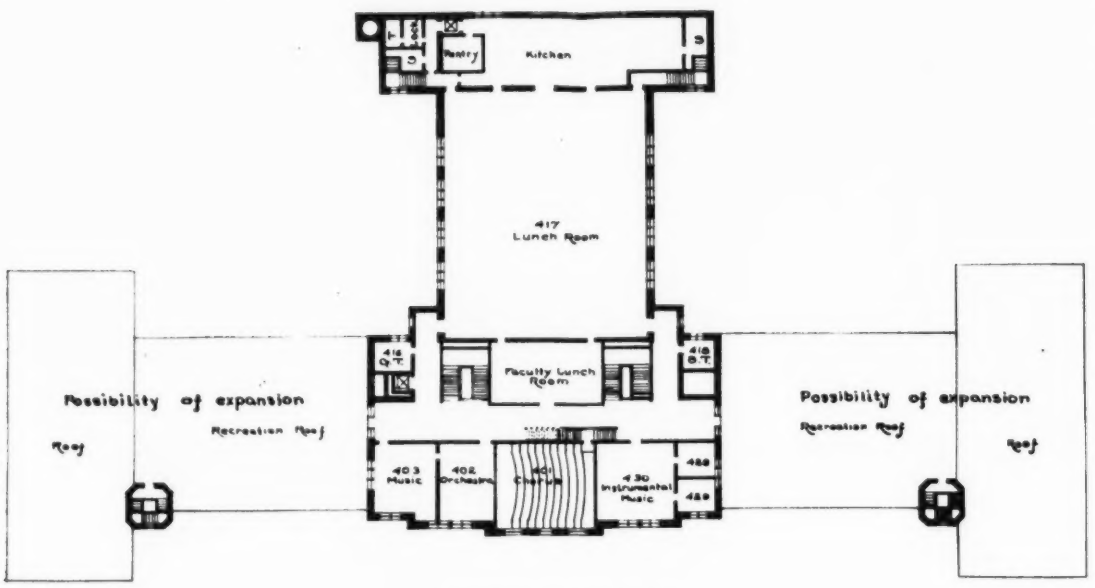
Economy Through Adaptability

The principle of adaptability has not been applied scientifically until lately. It has been rather an ordinary situation to find a high-school building with a physics, or a chemistry, or an art department, each of which was large enough for a school with two or three times more pupils than could be supported in the regular classrooms. This can mean only one thing; namely, that the building is not well adjusted to the needs of the school program, and that large sums of money have been wasted in providing expensive rooms and equipment which can be used only part of the time. If these laboratories, on the other hand, had been provided more nearly in accord with school-program needs and the equipment planned for multiple use so that almost any academic class could hold its sessions in the laboratories, the use of the money expended would have been more efficient and economical.

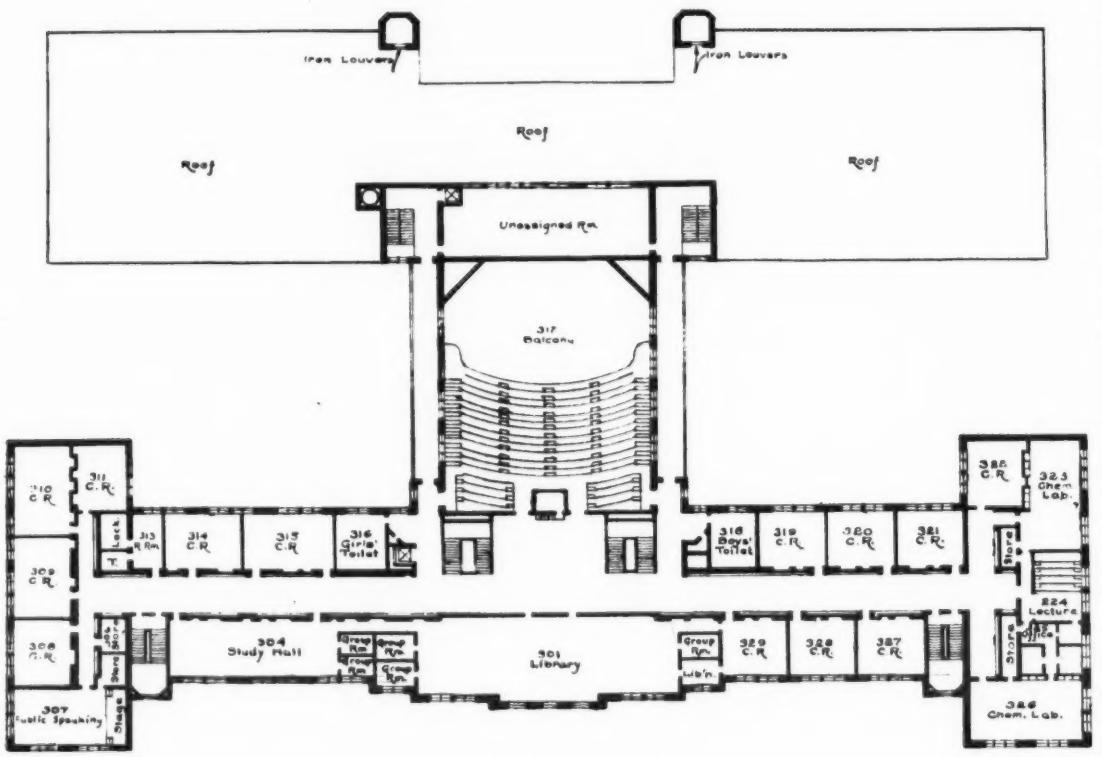
5. *Accessibility.* The principle that all facilities must be accessible has always been recognized in planning school buildings. But the questions of to whom accessible and of how accessible have had little place in the planning. All school facilities must be conveniently located first for the use of the school, and second for the use of the community. In the school use, the factors to be considered are pupils, teachers, and the school program. Also it is necessary to place those activities which are most frequently used by the community, first, where they will function well in the school program, and second, where they can be easily reached

[1] Report of the Committee on Schoolhouse Planning, 1925. National Education Association, Washington, D. C.

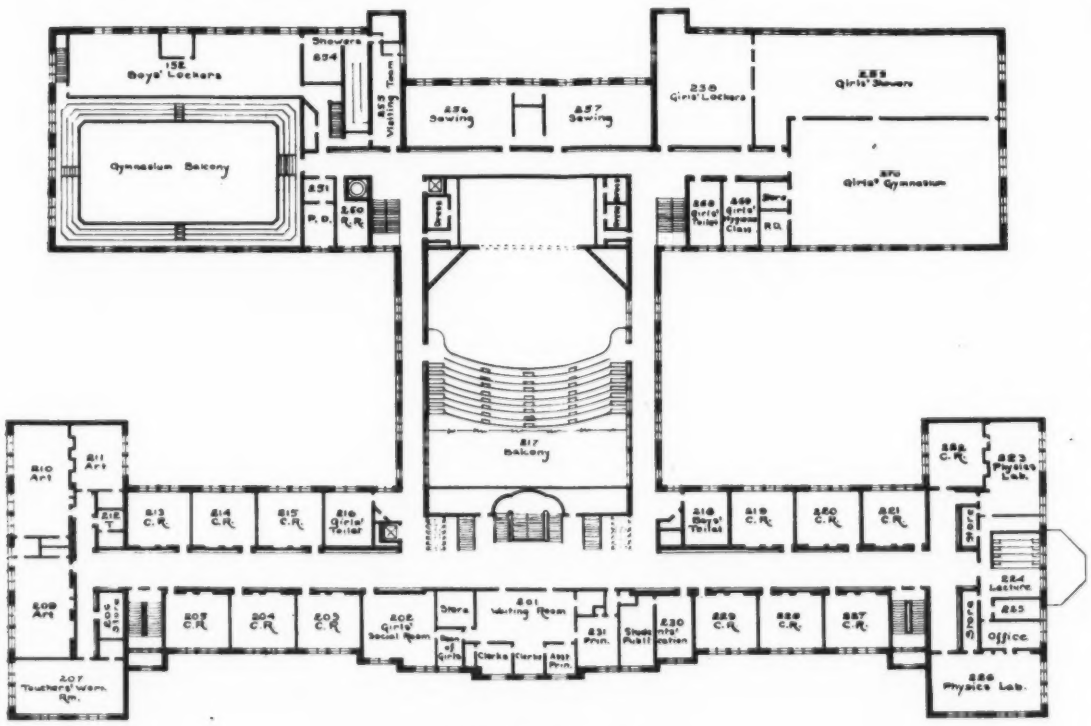
[2] Bureau of Publications, Teachers College, Columbia University, N. Y.



FOURTH FLOOR PLAN



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SECOND FLOOR PLAN

FLOOR PLANS OF THE EAST HIGH SCHOOL, DENVER, COLO.,

which illustrate the principles of organization discussed. Mr. George H. Williamson of Denver was the architect of the building. The first-floor plan will be found on page 155.

by the public at large. For these reasons, in a large high school the auditorium should be located near the center of the building, where pupils can congregate from all directions and where the audiences from the outside can step from the outside into a lobby and from the lobby into the auditorium. It should be possible to confine people to the lobby and the auditorium by means of closed gates.

Location for Multiple Uses

Other facilities which should receive both school and community consideration in their location are the offices and the gymnasium units. The office should be located as near the center of the building as possible so that it can be easily reached by a minimum length of travel from any part of the building; because it is visited frequently by the public it should be located near the main entrance. The gymnasium units are usually used by the public for evening work and should, therefore, be located for easy entrance from the outside so that the users of the gymnasium in the evening will not be forced to march through a large portion of the building. Considerations of school uses which govern the location of gymnasiums will be considered later.

Aside from the auditorium, the central offices, and the physical-education unit it seems that all the facilities in the building depend entirely upon school needs.

The degree of accessibility or how accessible rooms should be depends almost wholly upon the school program, and follows in general the idea that those classrooms used most frequently by the greatest number of pupils should be most accessible, and those used least frequently should be least accessible.

Table I shows the number of pupil periods, that is, the number of pupil recitations per week, in the different senior-high-school activities of East High School, Denver.

TABLE I. PUPIL PERIODS PER WEEK IN EACH SUBJECT, EAST HIGH SCHOOL, NOVEMBER, 1926
Membership—1919 Pupils

Pupil period means one pupil in one recitation.

Subject	Pupil Periods
Academic classes	
English	8.190
Social Science	7.645
Foreign Languages	7.345
Mathematics	6.385
Total, academic	29.565
Study	14.576
Science	4.930
Physical education	3.329
Commercial	2.800
Music	1.338
Home economics	1.127
Industrial arts	1.105
Art	675
Total	59.445

Upon the application of the principle of accessibility to this program it is evident that the academic classrooms should form the central portion or the core of the building, because they are used most frequently by the greatest number of pupils. Science laboratories are used by a relatively large number of pupils, therefore, should adjoin the classroom unit. The shop studies attract small numbers of pupils, and the shops are seldom used more than once per day for any given pupil, therefore, they should be located at the extremes of the building. The auditorium is used frequently by the whole school, and, therefore, should be placed so that pupils may get to it and back to their classrooms quickly, easily, and without congestion. Examination of the accompanying floor plans of the East High School along with the data in Table I will show how the principle of accessibility has been applied in the planning of this school.

It will be noticed that the classrooms with the study unit form the central core with the science rooms adjoining the classrooms, and that the shops and home-economics laboratories used less frequently and by fewer pupils are well removed

(Continued on Page 155)

Little But Important Things Often Forgotten in Schoolhouse Planning[1]

John J. Donovan, A.I.A., Oakland, Calif.

This paper is concerned with little but important things pertaining to schoolhouse planning. Any one of the items considered may become monumental and most important after the building is completed, if forgotten or not included in the preparation of the plans and specifications.

It is not easy to determine which of the many elements entering into the planning and construction of a schoolhouse is of little or most importance. Consequently, in presenting this paper, I am conscious of the fact that the reader will think of many items which may seem to have been overlooked.

The Employment of the Architect

Perhaps the first and most important item of all for the architect is that he assure himself of the job. After the work has been assigned to him, it is essential to have a properly prepared contract between the board of education and his firm, then to have the contract adopted by resolution and signed by the parties authorized to sign, and to have this latter procedure stated in the resolution. The contract should clearly set forth what the architect will be expected to furnish in the way of plans, specifications, superintendence, and other service and the amount of compensation to the architect and the time payments shall be made for the service rendered. I mention these details because boards of education and architects are prone to enter into verbal understandings which are readily forgotten or canceled. So, too, architects sometimes begin work on the strength of a resolution, which may be rescinded at a most inconvenient time. There is an old axiom which goes something like this: Clear and established understandings at the beginning usually make fast friends in the end.

A definite understanding should be established regarding the superintendence and inspection of work. Boards of education are often misled into believing that for the fee of 6 per cent, an architect can afford and will provide the superintendence. It is a foregone conclusion to those who know, that any such understanding is conducive to unpleasant disagreements. Assuming that the architect's fee is 6 per cent, which it should be for full architectural service, there will not be sufficient financial leeway, regardless of the size of the work, for the architect to furnish a superintendent from his commission. If he does furnish the superintendence, the board can rest assured in most cases that the superintendent will be an underpaid man, probably a beginner in the work of building inspection and superintendence, a situation from which a great deal of trouble is likely to arise.

The Superintendent of Construction

Experience teaches us that the proper course for a board to follow is that of employing an experienced building superintendent through the architect, having him represent both the board and the architect. The man should be selected because of his capability and integrity—two very important attributes in a building superintendent. I say the board should pay for the service because, if the job is not properly and constantly superintended and inspected, it is possible for the school district to lose a great deal more in the execution of the building contract than the price of employment of the superintendent, and in the end the board will have only an inferiorly constructed building.

I know of no worse way of selecting the superintendent of construction than for the board of education to employ a man directly, and delegate to him the authority which should rest with the architect. When this occurs, there are two heads on the project, and the contractor is likely to be at a loss to know whom he shall recognize as the proper authority. Direct employment often gives the superintendent the impression that he is placed upon the job to inspect the architect, as well as the work of the builder. Conflict in authority leads to conflict in interpretation of the drawings and specifications, and as a consequence, trouble and disagreeableness are generally rampant before the job can be completed. The board of education is the loser in the end. Somebody has said, "to succeed, keep out of trouble," for trouble causes waste of time, mental irritation, and entangling, needless bother.

It is essential that the architect and the board of education use the correct corporate name of the board and school district as owner in all documents, plans, and specifications of the proposed building. It should be remembered that the contract documents are legal documents, and to obviate erroneous technicalities it is well to be correct in this preliminary data.

The Statement of the Problem

Each and every new school building should have the problem of content, type of structure, and materials definitely and accurately stated. This statement should be furnished to the architect by the superintendent of schools, whether the latter obtains it from a recognized surveyor and compiler of school-building programs, or from a committee appointed from his staff. In any event, I am insistent that the architect shall participate in the preparation of the statement in order that he may be thoroughly familiar with the causes prompting the general facts of the statement and the details of the statement itself.

A reasonable amount of time should be spent in the preparation of this statement, because many important items are bound to be overlooked or not thought of if the work is done hurriedly. There is so much to be said regarding the statement of a school-building program that this might well be left for another paper, but I do wish to emphasize the fact that I believe the statement of the problem is one of the most important preliminary steps in building schools.

A few important factors of the statement are: (*a*) the number of pupils to be accommodated; (*b*) the number of pubils in various class units; (*c*) what excess pupil capacity is desired in the building to be erected, i.e., how much for the future shall the present plan indicate for immediate construction.

No matter how complete the statement may be, it follows necessarily that enlargement upon the statement will occur from time to time as the problem is developed with the drawings. This prompts me at this time to establish a basic rule: Every plot plan and every floor plan should have the points of the compass placed upon it before any final drawings are made at all, and every plot plan and every floor plan upon completion should have the points of the compass indicated when the plans are presented to the board of education for final approval. This will enable the architect to plan more intelligently, and the superintendent and the board of education to better interpret the plans and judge them more intelligently than if they must refer continually to the plot plan.

The Preliminary Drawings

The preliminary drawings should be thoroughly studied and carefully prepared and should show the necessary fixed and movable equipment. Preliminary drawings presented in this manner enable the superintendent and the board to determine accurately the adequacy of the scheme.

After the preliminary plans have received the approval of the board of education and the superintendent, the architect should not fail to send copies to the state authorities to be registered with the state board of education or other state reviewing authority. When it is time to file the working drawings and specifications with the state authorities in view of the legal requirements, further copies should be recorded. Not only should the drawings be filed with the state authorities for correction, suggestions, and approval, but the state authorities should be invited to collaborate and assist at the very beginning of the work. In this way, the local board of education, the architect, and the work will be benefitted by the ever-increasing experience and knowledge of the school-building problem, which the state authorities unquestionably acquire due to their daily contact with the work of different architects and educators in the communities of the state.

The working drawings should not be started until all changes and modifications have been made in the preliminary drawings. It is well for the architect to keep records of all conferences with the board of education and other authorities, to see that documents are properly filed, and to have the district attorney approve all legal documents, such as the notices inviting proposals, contract forms, general conditions, and bond forms. If this is not done in the early stages of the work, unpleasant delays in awarding contracts may follow at a great expense to the board and to the architect. In the same way, it is absolutely necessary for the architect and the builders to comply with all laws, local and state. Similarly, it is desirable to comply with all requirements of the local board of fire underwriters.

General Conditions of Contract

At this time, it may be well to mention the matter of a topographical survey of the site. No matter how level the property may seem to be, the board of education should furnish the architect an accurate topographical survey, showing the boundaries and grades; the location of soil, water, and gas pipes; the flow of sewage pipes, etc. Then tests of the bearing capacity of the soil or "soil tests" should be made, and these tests should extend to at least 8 or 10 feet below the surface of the ground.

A word should be said regarding the *general conditions.* If the architect will adopt the standard form of the American Institute of Architects regarding the general conditions of each building contract, he will not go very far wrong, because this standard form is the result of many years of experience and collaboration between architects, owners, contractors, engineers, and attorneys.

Statement of Funds and Cost Estimates

At this point, too, mention should be made of that important item, the *money available.* The funds in hand for the building should be clearly stated by the board of education: the amount of money available, and the sum to be expended for (*a*) land; (*b*) building; (*c*) driveways, paths, landscape treatment; (*d*) architect's fees; (*e*) furniture and equipment; (*f*) surplus for contingencies.

This statement should be made immediately after awarding the contract to the architect. Then, as time progresses, and as the preliminary drawings are completed, the estimated cost of the building should be ascertained by

[1]Abstract of a paper read before the National Council on Schoolhouse Construction, Oct. 24, 1928, at Raleigh, N. C.

computing the floor area and the cubage of the building. As changes are made in the drawings, the proposed work should be checked. The board should be notified from time to time as the estimates vary, so that the members may be kept fully apprised of the changes and consequently in the estimated cost of the work.

As the preparation of the drawings progresses, the architect should inform the board of education on the type of structure he has in mind, the character of the materials to be used, etc. This information will help a great deal in enabling the board to form an opinion of the value, the character, and the type of building it is sponsoring.

Sizes of Classrooms

The sizes of classrooms, laboratories, and of instruction rooms should be worked out at the very beginning with a thorough understanding of (*a*) the furniture which will be used; (*b*) the number of occupants; (*c*) the other accommodations which the rooms are to contain. It is necessary to establish the sizes of the classrooms from the equipment and its arrangement for the following reasons: The equipment for classrooms below the sixth grade is less in dimensions than that for grades above the sixth. So, too, furniture used in grades above the eighth, is larger. Consequently, to establish the sizes of classrooms, without taking into consideration the equipment and without laying it out on paper, is not scientific planning.

Let me cite an example: School desks are graded according to number and letters. The adjustable desks are graded alphabetically, beginning with A, and the nonadjustable, or combination desks, are graded numerically from 1 to 6 (the higher numbers representing the smaller sizes). The A adjustable desks used in the upper grades generally measure 23½ by 16 in., spaced back to back 33 to 34 in. for pupils 11 to 18 years of age.

The B adjustable desk is 20½ by 14 in., spaced back to back 30 to 31 in. Ages of pupils, 7 to 11 years.

The C adjustable desk measures 17½ by 12 in., spaced back to back 27 to 28 in. Ages of pupils, 5 to 7 years.

Now, the No. 1 combination desk measures 23½ by 16 in., spaced back to back 30 to 31 in. Age of pupils, 17 to 21 years.

The No. 4 combination desk for seating sixth-grade pupils, has a top 20½ in. long, 14 in. wide, spaced back to back 27 to 28 in. Age of pupils, 9 to 11 years.

The No. 6 combination desk is 17½ by 12 in., spaced back to back 24 to 25 in. Ages of pupils, 5 to 6 years.

Details of Classrooms

It is evident from the foregoing that the classroom unit should be worked out with a complete understanding of the size of the furniture, the width of the aisles, the spacing at the rear and front of the room, and the number of pupils to occupy the room. This procedure should be followed throughout for the elementary school, the junior high school, the senior high school, and the junior college. To do otherwise, is likely to incur difficulties in administration.

The planning for blackboards, the height of the chalk rail, the height of the blackboard between the chalk rail and the blackboard cap, the pinning space above the blackboard, and the height of the chalk rail and blackboard back of the teacher's desk are often overlooked. We establish the height of the teacher's chalk rail at a point 3 ft. above the floor and extend the blackboard 4 ft. upward, or at least 3 ft. 6 in. In the latter case, we provide a pinning space above the blackboard top rail. The reason for establishing the teacher's chalk rail at 3 ft. is to sufficiently elevate the lower part of the blackboard so that all pupils can see it, and also to make it convenient for the teacher.

Shall the classroom be artificially illuminated for evening classes? This question applies to other rooms in the building as well.

Upon establishing the sizes of the classrooms, the results should be checked with the legal requirements for the square feet of floor area and the cubic feet of air content per pupil.

While speaking of the classroom, and this applies to other rooms as well, it should be said that the building should be constructed so that changes in the sizes of the rooms may be easily made to care for future educational requirements. This is accomplished by separating the rooms with nonbearing partitions. The corridor walls and the exterior walls only should support the floor loads.

Planning the Auditorium

In planning the auditorium, it is necessary to first establish the seating capacity—the number of seats on the main floor and the number in the gallery, if there is to be a gallery. Shall the floor be flat or sloping? Shall the stage be arranged for scenery? Usually, it is necessary to provide a fireproof motion-picture booth, and to arrange for darkening the auditorium in the daytime for motion pictures.

The auditorium is to be located so that it is accessible for community meetings and other outside purposes in the evening and at other times, without opening up the entire building. The heating and ventilating system for the auditorium should be separate from the rest of the building so that the latter need not be heated when the auditorium alone is used.

Acoustical treatment must not be forgotten. So, too, the control of the auditorium lights from both the stage and the moving-picture booth must be provided for.

All exits from the auditorium (and the building as a whole) must be compared with local building laws and ordinances. It is essential to establish sight lines for both sloping and level floors, and especially for the balcony. This will help to establish the height of the stage-floor level. It is necessary to study the local building ordinances regarding stage equipment. Some cities consider a school assembly hall in the same class with theaters. This information must be ascertained as early as possible.

Arrangement of the Gymnasium

The gymnasium, like the auditorium, is variable in requirements. In some schools, a room with bare walls, no equipment and no offices, and more often with very little regard for size is often designated as the gymnasium.

The requirements of the gymnasium should be definitely and fully established in the school board's statement of the problem. Then, when it is necessary to cut the cloth to meet the finances, those features of the room which can be dropped without total loss, should be eliminated. In discussing this problem, the question of finances should not enter, except as the building must be planned and built within the limits of the money available.

The size and height of the gymnasium are generally determined by the requirements of the school. The basketball court might be considered the unit of measurement. The minimum size of a court is 35 by 60 ft.; the average size is 45 by 75 ft., and the maximum size is 50 by 90 ft. A space of at least 3 ft. should be allowed all around the court; greater space than that should be provided if possible, to prevent injury to players.

The minimum clear height—that is, the height established between the floor and the underside of the lower cord of the roof trusses—is about 16 ft., the average height is 18 ft., and the maximum height is 22 ft.

Shall seating arrangements be made for spectators? Shall there be one gymnasium or two? One for boys and one for girls? Shall there be a physical examination room? A physical director's room? Shall there be a shower and dressing room for each physical director? Shall there be a corrective-exercise room? If so, how many shall it accommodate? Shall a restroom for girls be provided? Shall there be an apparatus storage room? Shall the gymnasium be accessible from the outside for community uses, without opening the main part of the building? What arrangement shall be made for locker, dressing, and shower rooms? What number of lockers and showers is desired for each sex? Shall there be a towel room? Shall there be a drying room, i.e., a drying room for gymnasium clothing? Is the superintendent of schools favorable to the so-called "basket system" for handling gymnasium clothes and towels? What disposal is to be made of soiled towels? What materials are to be used for shower and dressing-room stalls—marble, metal, or wood? What material shall be used for the floors of the locker rooms?

Further Gymnasium Details

The ventilation of the locker and shower rooms is very important. How is it best handled in this building in hand?

Floor drains are installed frequently in locker rooms to permit the flushing and flooding of the floor for sanitary purposes. In this case, the bottom of the lockers must be at least 6 in. above the floor.

What space is to be provided between the locker rows? What is to be the size of the lockers? Shall a key cabinet be provided for the lockers, in the director's office? What of mirrors?

Toilet rooms adjacent to the lockers and shower rooms are necessary, but are often overlooked.

It is necessary to protect the electric lights in the gymnasium. Inside wire screens of 1½-in. mesh should be provided for the windows. If the gymnasium is used as an auditorium, the architect must provide a modern motion-picture booth and stage equipment at the opposite ends or sides.

Shall knockdown bleachers be used? If so, storage space must be arranged.

For protecting the feet of the pupils, it is highly desirable that the floor of the gymnasium be what is called a "spring" floor. The "spring" floor is provided by placing 2 by 4-in. sleepers over the underfloor, parallel to the floor joists and spaced between them. Then the finish floor is nailed to these sleepers. The arrangement is not expensive and is quite effective in obviating common injuries to the players, such as fallen arches. A floor of maple is best for the gymnasium. The best finish is boiled linseed oil. If the floor is waxed before dances, it may easily be cleaned off with boracic acid.

Finish of the Gymnasium

For the walls of the gymnasium, plaster may not be used. Brick with joints struck smooth is considered best. The color of the brick selected should produce the greatest amount of reflected light.

If the roof trusses are painted green and the underside of the roof sheathing a light blue or green, the best color effect will be produced to enable the occupants of the room to see the moving ball easily. Equipment for supporting the basketball baskets and backboards is, of course, necessary.

A running track is of questionable use today. However, if a track is installed, it should be 6 ft. wide, with curves not less than 15 ft. in radius. The floor should be covered with a ⅛-in. cork carpet. It is desirable to provide

(Continued on Page 156)



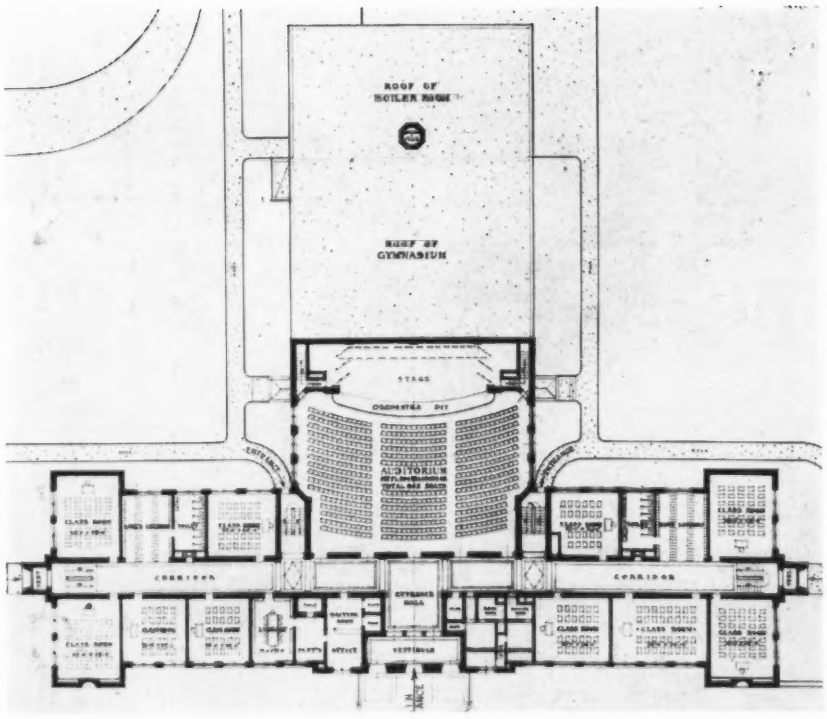
WASHINGTON IRVING HIGH SCHOOL, TARRYTOWN, N. Y.
Guilbert & Betelle, Architects, Newark, N. J.



AUDITORIUM, WASHINGTON IRVING HIGH SCHOOL, TARRYTOWN, N. Y.
Guilbert & Betelle, Architects, Newark, N. J. (See Page 44)



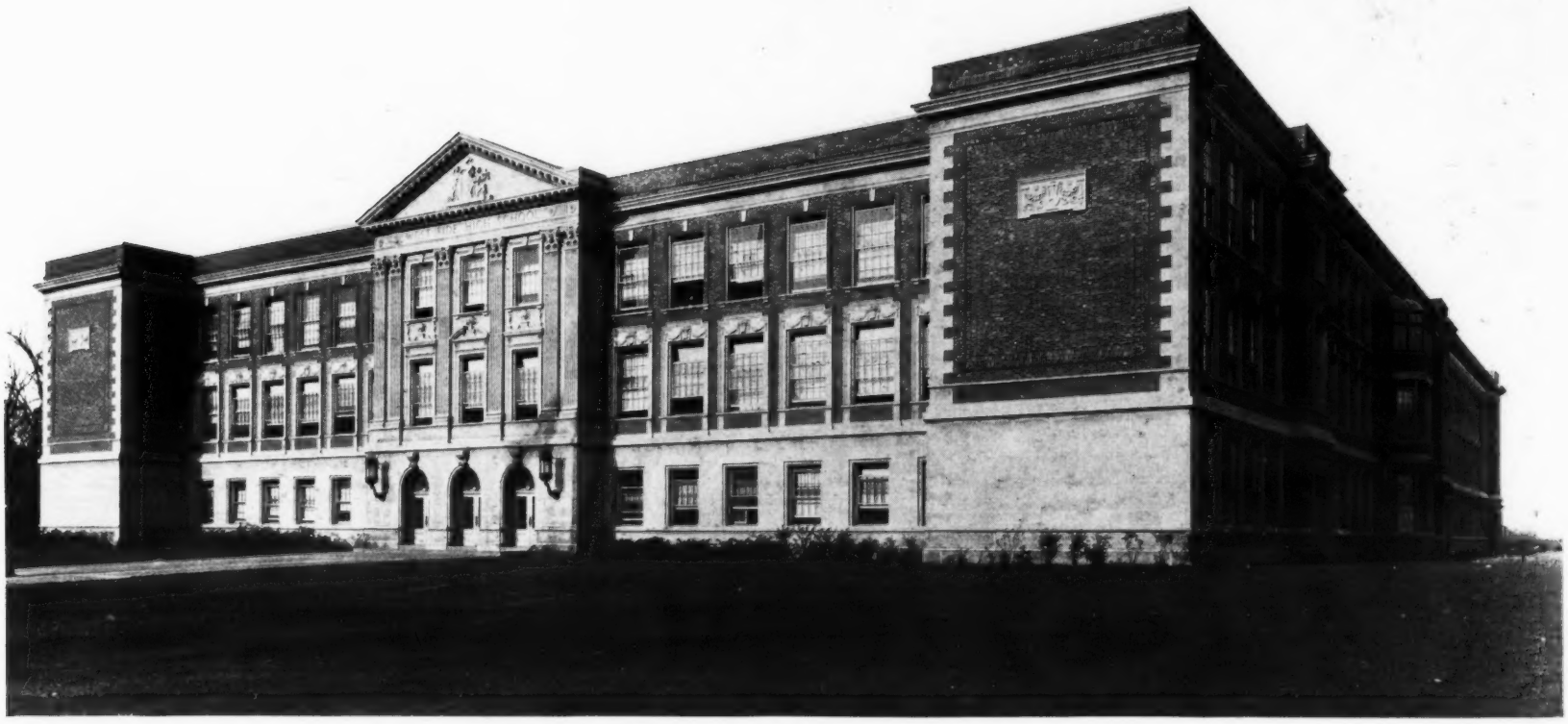
WASHINGTON IRVING HIGH SCHOOL, TARRYTOWN, N. Y.
Guilbert & Betelle, Architects, Newark, N. J.



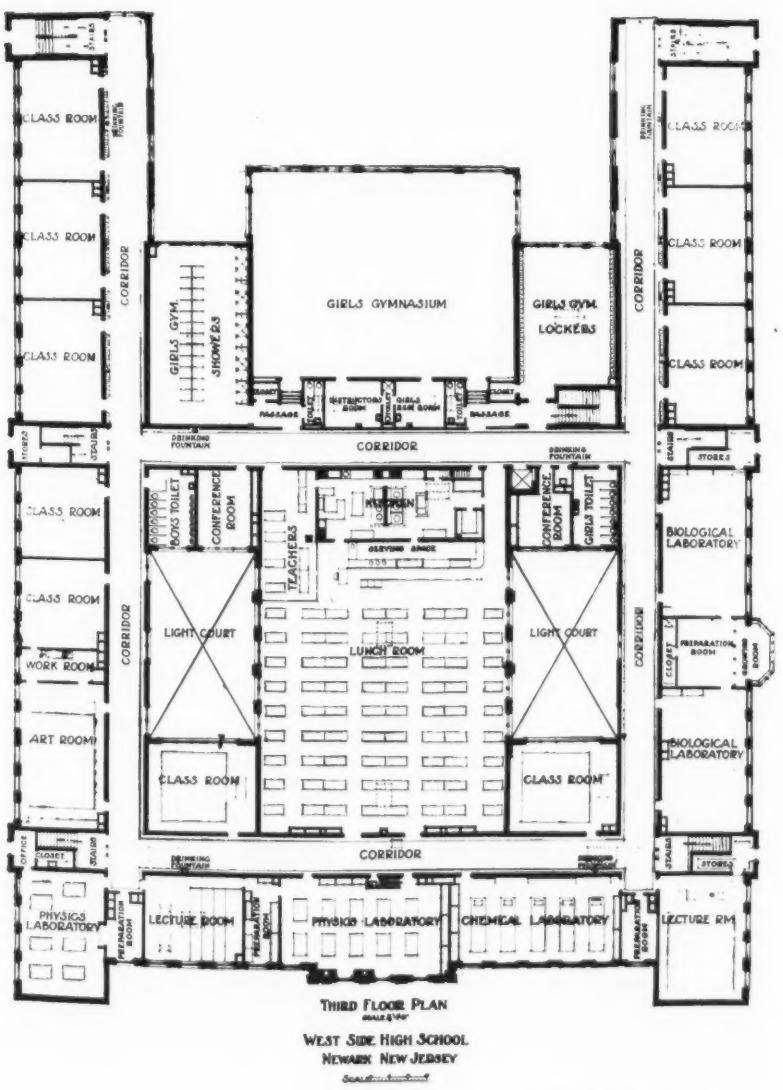
FIRST FLOOR PLAN, WASHINGTON IRVING HIGH SCHOOL, TARRYTOWN, N. Y.
Guilbert & Betelle, Architects, Newark, N. J.



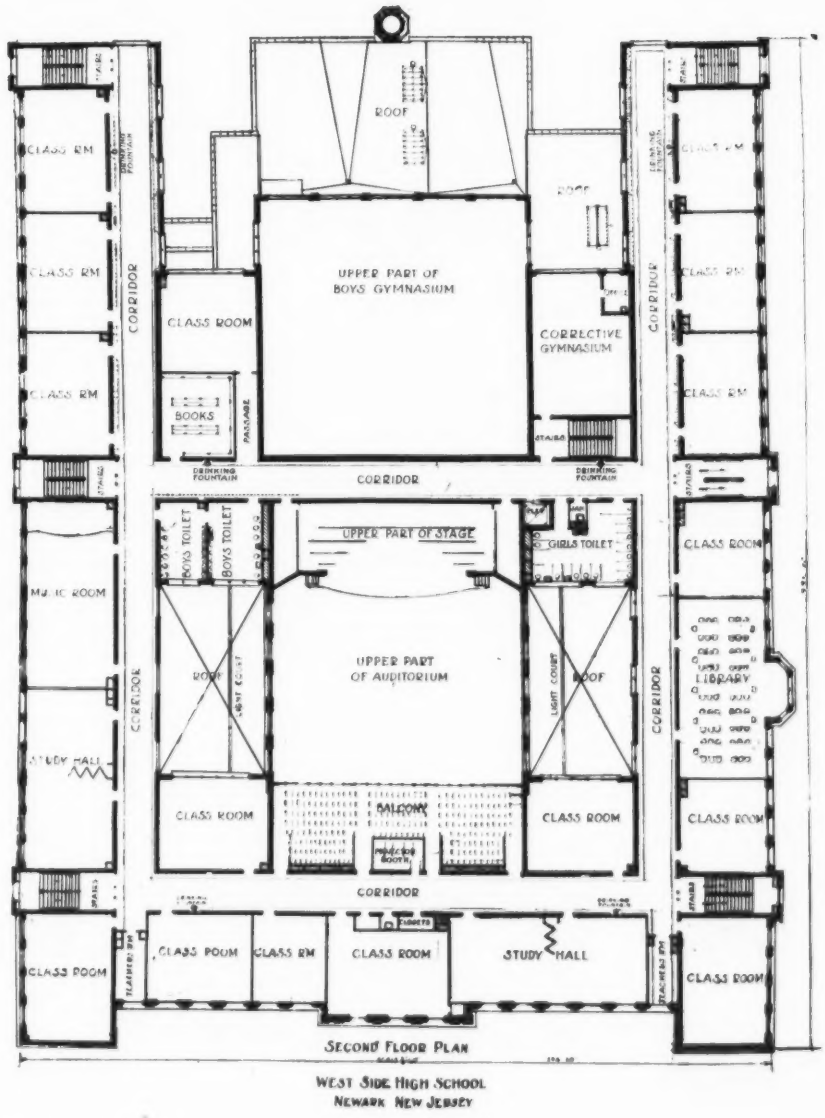
CONSERVATORY, WASHINGTON IRVING HIGH SCHOOL, TARRYTOWN, N. Y.
Guilbert & Betelle, Architects, Newark, N. J.



GENERAL VIEW, WEST SIDE HIGH SCHOOL, NEWARK, N. J.
Guilbert & Betelle, Architects, Newark, N. J.

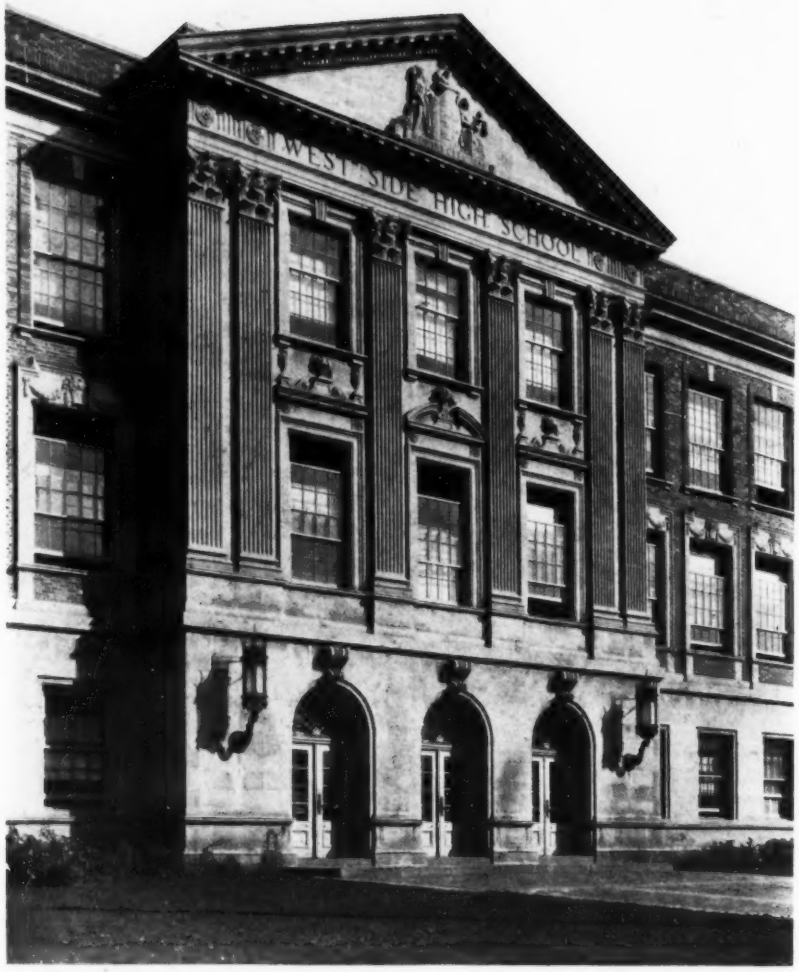


THIRD FLOOR PLAN
WEST SIDE HIGH SCHOOL
NEWARK NEW JERSEY

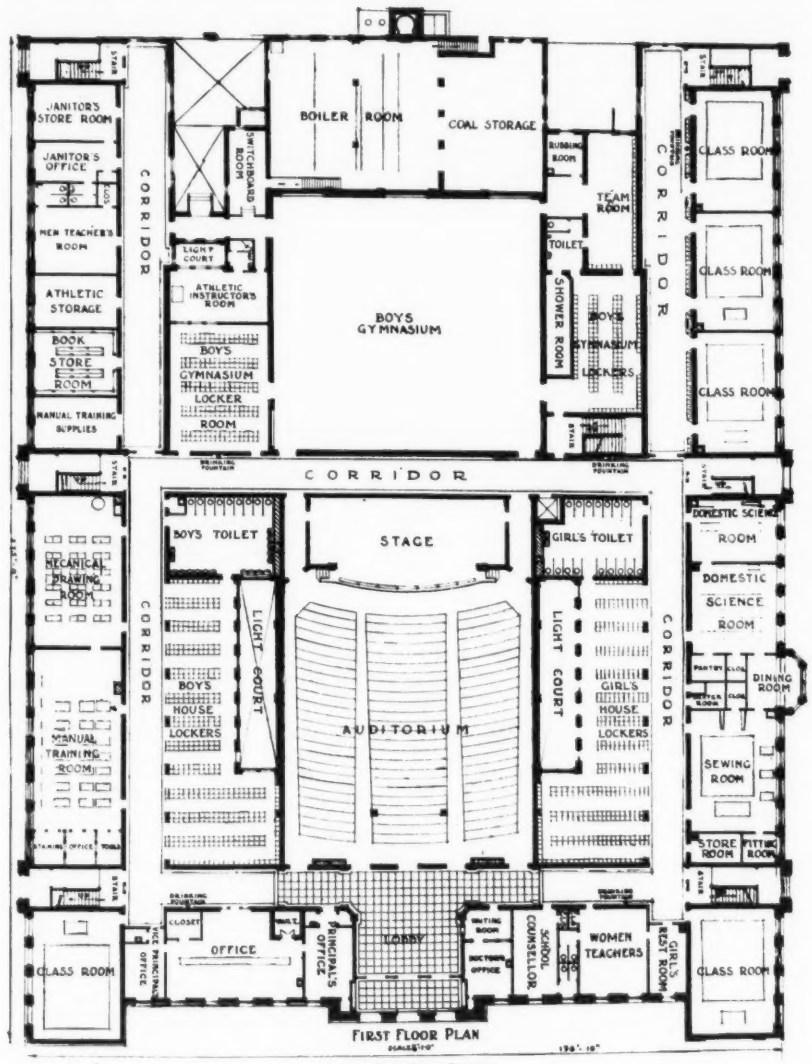


SECOND FLOOR PLAN
WEST SIDE HIGH SCHOOL
NEWARK NEW JERSEY

Guilbert & Betelle, Architects, Newark, N. J. (See Page 44)



DETAIL OF FRONT ENTRANCE



WEST SIDE HIGH SCHOOL
NEWARK NEW JERSEY

WEST SIDE HIGH SCHOOL, NEWARK, N. J.
Guilbert & Betelle, Architects, Newark, N. J.

THE WEST SIDE HIGH SCHOOL, NEWARK, NEW JERSEY

This is a metropolitan high school located in a thickly populated district of a large city. Because all large cities are burdened with high taxes and large school expenses, it is necessary to get as large a return for the money expended as possible by making a compact building accommodate the maximum number of pupils.

A classical style of building was adopted in the case of the West Side High School, with the exterior of red brick and limestone.

In buildings of this size, it is not practical to have a high sloping roof, due to the large area to be covered and the added expense. Therefore, a flat roof was adopted, which kept the cubiture of the building at the minimum, and at the same time held down the cost.

The building has 1883 pupil stations, and the cost, exclusive of architect's fees and equipment, was $950,000, which is a cost of 48 cents per cubic foot.

Construction Data

Site

Dimensions	345 by 452 ft.
Principal frontage	345 ft.

Building

Use	Senior high school
Number of rooms	51
Number of laboratories	4
Conservatory	1
Library reading room	1
Librarian's office	1
Study rooms	2
Fine-arts room	1
Music room	1
Office	1
Book-storage room	1
Nurses' room	1
Clinic	1
Girls' restroom	1
Teachers' restroom	1
Auditorium	65 by 78 ft.
Seating capacity	1238
Gymnasium	67½ by 70 ft. and 55 by 70 ft.

Design and Construction Materials

Exterior facing	Red brick and limestone trim
Exterior design	Classical
Construction material	Fireproof
Corridor and stair finish	Steel stairs, stone treads, terrazzo floor, and brick wainscoting
Classroom finish	Plaster walls, wood floor, and oak trim
Auditorium finish	Plaster walls, wood trim, painted and decorated
Gymnasium finish	Buff-brick walls
Finish of toilet rooms	Tiled floors and wainscoting, and metal partitions

Mechanical Equipment

Type of heating and ventilation	Two-pipe vacuum return line, with A. C. classroom ventilating units
Temperature control	Automatic

Cost

Cost of building	$947,300
Cost per cubic foot	48 cents
Cost per pupil	$435

WASHINGTON IRVING HIGH SCHOOL, TARRYTOWN, N. Y.

The very name of this building suggests the style in which it is built. That is, it is a colonial structure and that is the style which has been used.

The building was erected on a large plot of ground facing the Albany Post Road, which is the main highway between New York and Albany. The property slopes abruptly in the rear toward the Hudson river, and presents a serious problem in fitting the building to the lot.

The exterior of the building is built of red brick, with white marble trim, and a green slate roof. The building is fireproof throughout. It has a total pupil capacity of 765, contains 1,110,000 cubic feet, and cost $522,000, exclusive of land and equipment.

The usual classrooms, special rooms, auditorium, and gymnasium have been provided, and in addition an unusually fine growing room or conservatory off the biological laboratory.

Washington Irving High School, Tarrytown, N. Y.
Construction Data

Site

Dimensions	239 by 180 ft.
Principal frontage	239 ft.

Building

Use	Senior high School
Number of classrooms	14
Number of rooms	25
Commercial department	1
Conservatory	1
Fine-arts room	1
Offices	1
Girls' restroom	1
Teachers' restroom	1
Auditorium	55 by 80 ft.
Seating capacity	800
Gymnasium	60 by 80 ft.

Design and Construction Materials

Exterior facing	Red brick
Exterior design	Colonial
Exterior trim	Marble
Construction material	Fireproof
Corridor and stair finish	Steel stairs, stone treads, glazed brick, wainscoting, linoleum floors
Classroom finish	Plaster walls, wood floors, oak trim
Auditorium finish	Plaster walls, wood floors, oak trim
Gymnasium finish	Buff-brick walls
Finish of toilet rooms	Tile floors and wainscoting, and metal partitions

Mechanical Equipment

Type of heating and ventilation	Two-pipe vacuum return line, with classroom ventilating units
Temperature control	Automatic

Cost

Cost of building	$523,581
Cost per cubic foot	47¾ cents
Cost per pupil	$680

ARCHITECTURE FOR LIBRARIES

The members of the American Library Association have drawn up eleven "points of agreement" as to the essentials of a serviceable library building. Inasmuch as several of the points enumerated apply with equal force to the planning of a school building we submit them herewith:

1. Every library building should be planned especially for the kind of work to be done and the community to be served.
2. Interior arrangements should be planned before the exterior is considered.
3. Plans should provide for future growth and development.
4. The building should be carefully planned for economical administration.
5. Public rooms should be planned for complete supervision by the fewest possible attendants.
6. No convenience of arrangement should be sacrificed to architectural effect.
7. There should be no decoration of reading or working rooms that will attract sight-seers to disturb readers and attendants.
8. There should be good natural light in all parts of the building. Windows should extend to the ceiling; in stacks, they should be opposite aisles.
9. No shelf should be too high to be reached by a person of medium height, standing on the floor.
10. Stairs should be straight, not circular.
11. There should be communication by speaking tubes or telephones between working rooms.



GENERAL VIEW, SOUTH PASADENA JUNIOR HIGH SCHOOL, SOUTH PASADENA, CALIF.
Marsh, Smith and Powell, Architects, Los Angeles, Calif.

THE SOUTH PASADENA JUNIOR HIGH SCHOOL

W. P. Childs

The junior high school at South Pasadena, California, is located in the center of the city, and provides accommodations for 1,000 pupils. The buildings were designed for maximum service and each room is designed for a particular use.

Architecturally, the building is a free interpretation of the best tradition of Italian and Spanish Romanesque. The buildings reach along Fair Oaks Drive 261 feet, and extend along Oak street 268 feet and Rollins street 374 feet. The building, an integral unit, covers one half of the entire plot. The buildings have been so planned that future addition may be erected without alteration.

The Auditorium

The auditorium was the central motif for the design. It has a twofold purpose. First, it provides a school assembly place, carrying a distinct appeal to youth. Second, it furnishes a community meeting place for pleasing environment, equipped to meet the need of any occasion.

The walls are covered with acoustic plaster. The tall windows are draped with heavy velour curtains.

The seating capacity is 1,011. All seats are upholstered in fabrikoid of spanish blue. The woodwork, which is Philippine mahogany, has been antiqued by sand blasting.

The sealing and beams are stenciled in many colored Romanesque designs. The same effect is carried out in the stencils on the proscenium arch.

Ventilation is by means of a large fan, located in the tower.

Bearing in mind the fact that the auditorium would be used by the city for evening functions, a complete system of border lights, foot lights and spots have been provided.

The projection booth is steel lined and located above the balcony seats.

Outside Theater

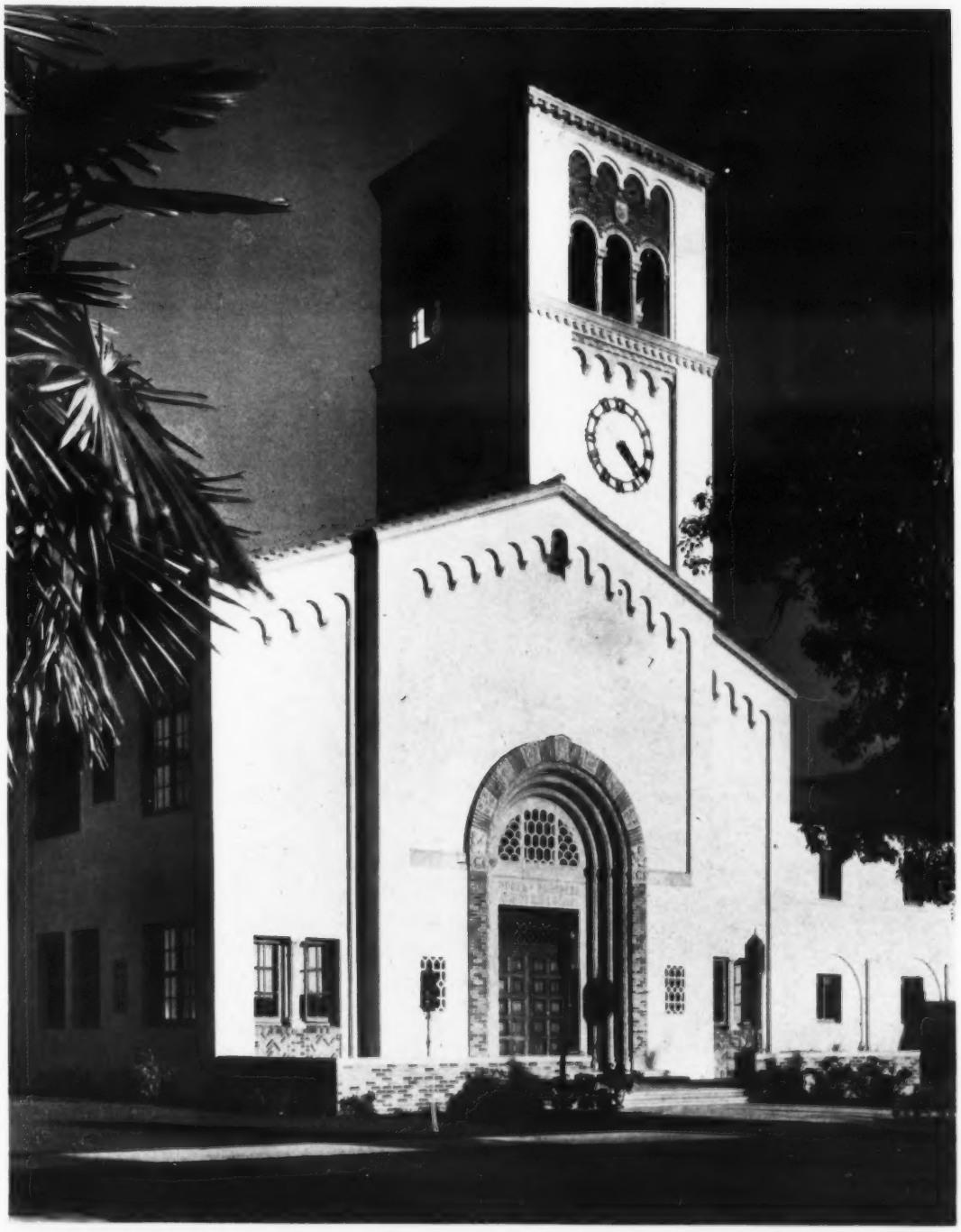
An open air theater is provided between the Rollins street wing and the administration section. This is near the auditorium, so that the classrooms used as extra dressing rooms in the auditorium, can also be used as dressing rooms for this outside theater.

The Administration Department

In the center of the buildings and directly in front of the auditorium, are the administration offices. The principal's office and general office is on the right-hand side as you enter, while the attendance office and vice-principal's office are on the left. Above these offices, on the second floor, is the councellor's office. Passing through the corridor between the two ground floor offices, one comes into a large hallway running the entire width of the building. At one end of this hallway an octagonal stairway leads to the balcony of the auditorium, offices, and classrooms on the second floor.

The Library

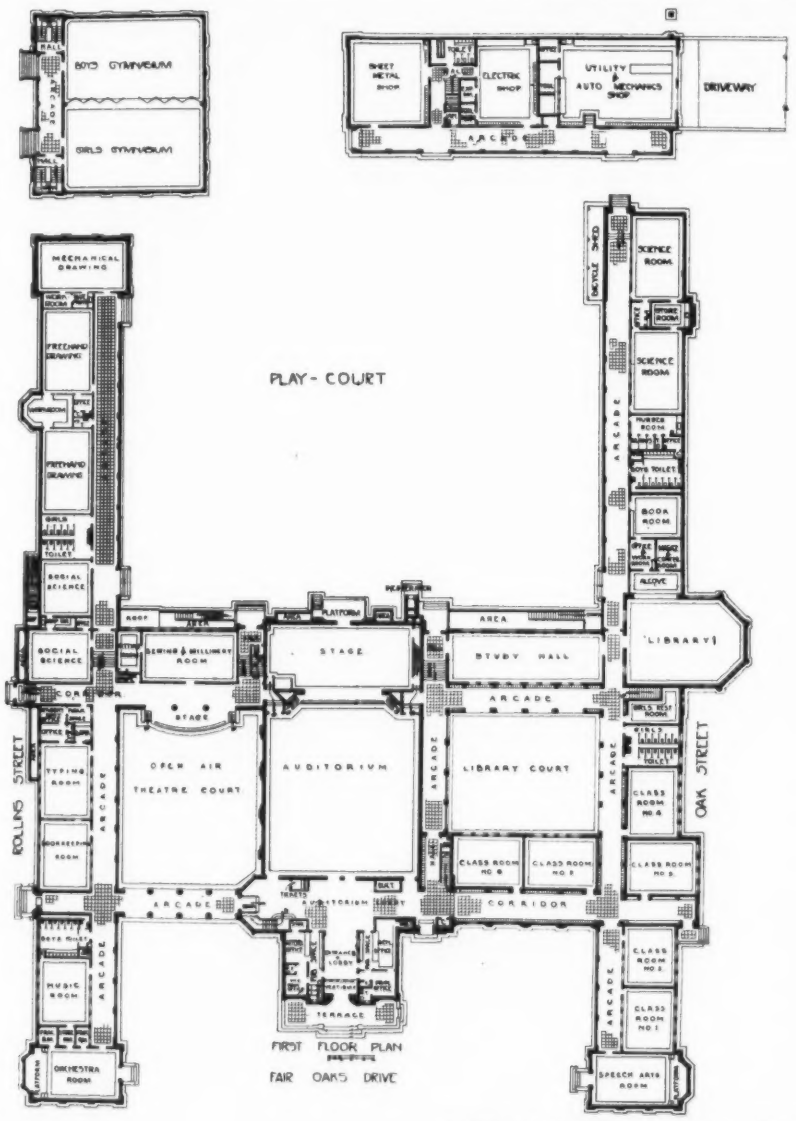
The library which is conveniently near the study hall, equals the auditorium in interesting archi-

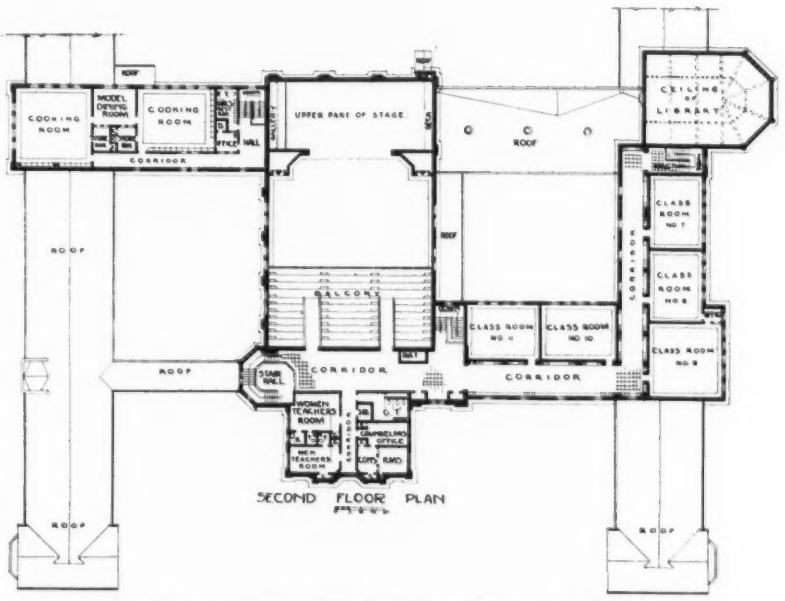


TOWER AND ENTRANCE, SOUTH PASADENA JUNIOR HIGH SCHOOL, SOUTH PASADENA, CALIF.
Marsh, Smith and Powell, Architects, Los Angeles, Calif.

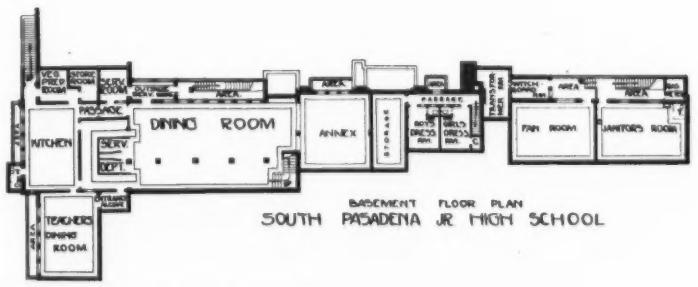


OPEN-AIR THEATER COURT FROM STAGE, SOUTH PASADENA JUNIOR HIGH SCHOOL, SOUTH PASADENA, CALIF.
Marsh, Smith and Powell, Architects, Los Angeles, Calif.





SOUTH PASADENA JUNIOR HIGH SCHOOL, SOUTH PASADENA, CALIF.
Marsh, Smith and Powell, Architects, Los Angeles, Calif.



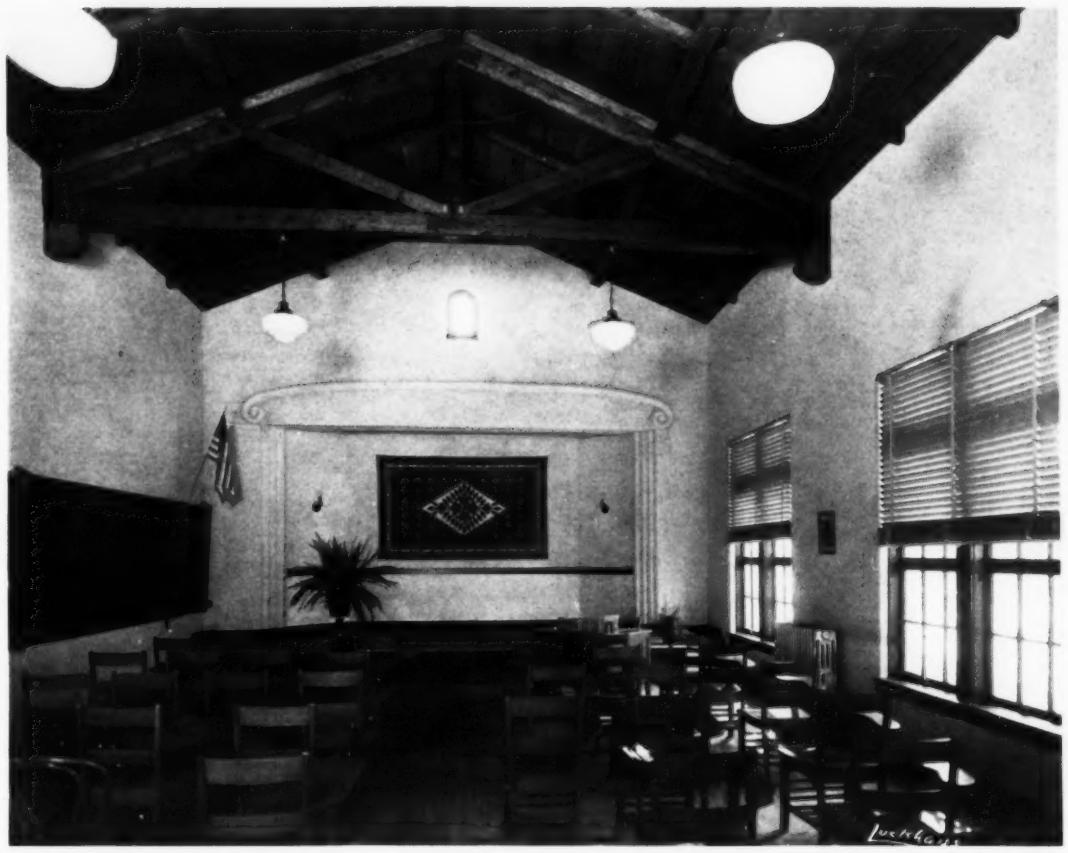
SOUTH PASADENA JUNIOR HIGH SCHOOL, SOUTH PASADENA, CALIF.
Marsh, Smith and Powell, Architects, Los Angeles, Calif.



PROSCENIUM ARCH IN AUDITORIUM, SOUTH PASADENA JUNIOR HIGH SCHOOL, SOUTH PASADENA, CALIF.
Marsh, Smith and Powell, Architects, Los Angeles, Calif.



LIBRARY, SOUTH PASADENA JUNIOR HIGH SCHOOL, SOUTH PASADENA, CALIF.
Marsh, Smith and Powell, Architects, Los Angeles, Calif.



SPEECH ARTS ROOM, SOUTH PASADENA JUNIOR HIGH SCHOOL, SOUTH PASADENA, CALIF.
Marsh, Smith and Powell, Architects, Los Angeles, Calif.

tectural detail. It projects 15 ft. beyond the main building line in an octagonal bay. The high wood ceiling, decorated in colorful Romanesque designs, gives the room dignified height, which is accentuated by tall windows, glazed with actinic glass.

The trusses and corbels are decorated with caricatures that present the development of literature through the ages. Acoustic plaster is used on the walls. The woodwork is finished dark and the chairs and tables harmonize with the architectural treatment.

Music

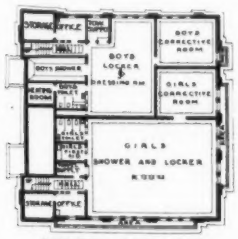
The Rollins street wing is devoted to music, commercial training, art and mechanical drawing. The orchestra room is a small auditorium which will accommodate fifty people. Directly opposite the music department is located a room for speech-arts work.

School Cafeteria

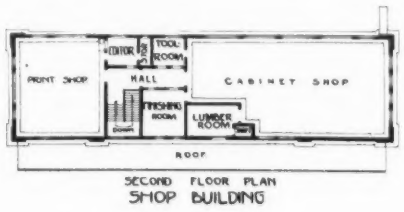
The school cafeteria is in the basement, below the household-arts department. The dining room will accommodate 180 pupils. There is a dining room for the members of the faculty. The kitchen is efficiently planned and equipped to facilitate service and insure the sanitary preparation of the foods.

The lateral wings connecting the auditorium and the Oak street wing contain a large study hall and standard classrooms. Each classroom accom-

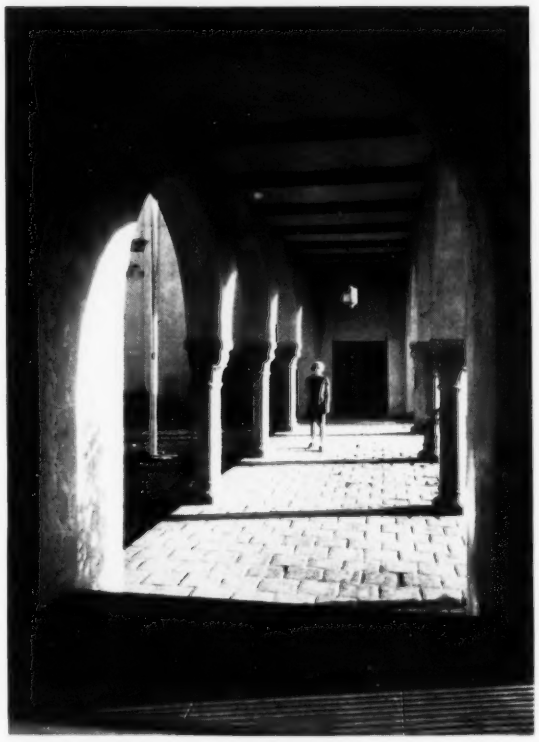
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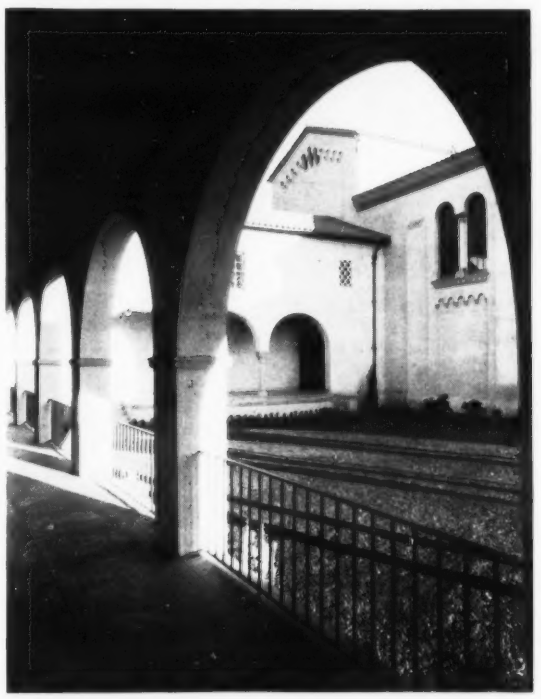
BASEMENT FLOOR PLAN
GYMNASIUM BUILDING



SECOND FLOOR PLAN
SHOP BUILDING



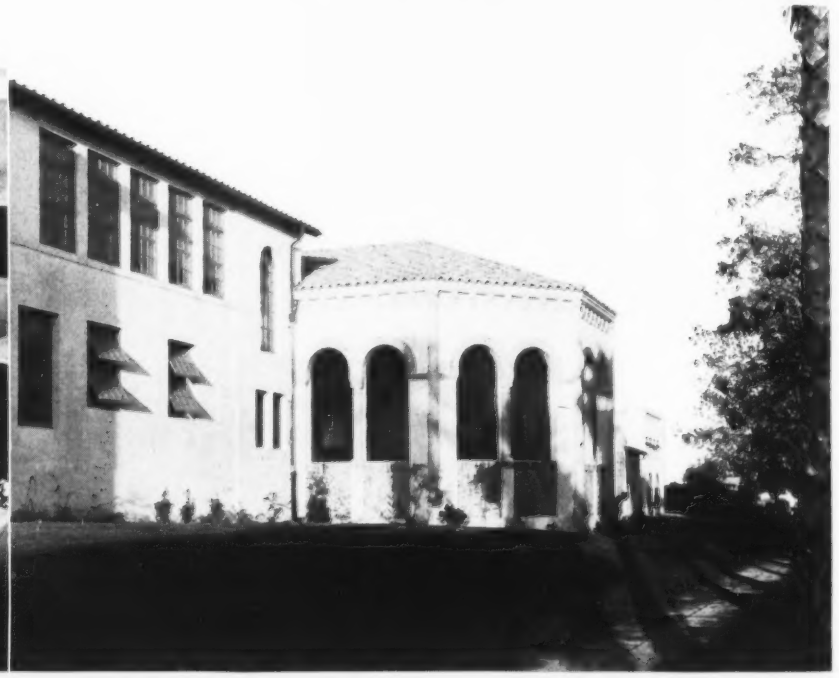
ARCADE, SOUTH PASADENA JUNIOR HIGH SCHOOL, SOUTH PASADENA, CALIF.



OPEN-AIR THEATER COURT, SOUTH PASADENA JUNIOR HIGH SCHOOL, SOUTH PASADENA, CALIF.



COOKING ROOM



EXTERIOR VIEW OF LIBRARY WING

SOUTH PASADENA JUNIOR HIGH SCHOOL, SOUTH PASADENA, CALIF.
Marsh, Smith and Powell, Architects, Los Angeles, Calif.

A Continuous Rebuilding Survey

Ernest C. Witham, Director of Research, Public Schools, Wilmington, Del.

Five years ago the city of Wilmington had 32 public-school buildings as follows:

White elementary schools	24
White high (connected)	2
Colored elementary schools	5
Colored grammar and high school	1

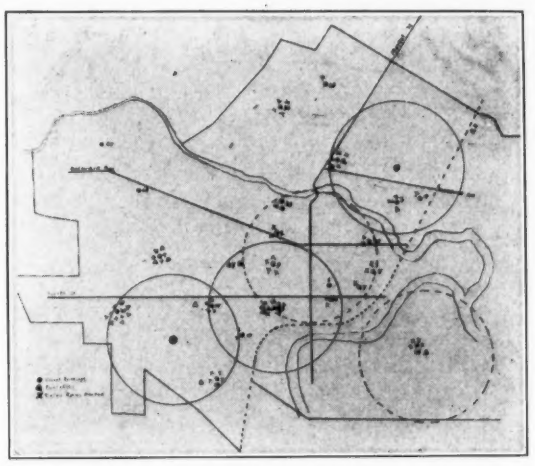
The oldest school in use had been built in 1852, and the most recent grade school, previous to the present awakening, had been erected in 1913. The high-school annex was completed in 1918. Figure 1 shows graphically when the old schools were built, by years, and also when additions were made. The four new schools recently constructed are included in the diagram.

The growth of Wilmington has been fairly uniform since the Civil War, but there have been some decades of much greater growth than others. For example, the year 1890 shows an increase over the year 1880 of 45 per cent. Another decade shows a growth of only 14 per cent. The erection of schoolhouses has been very irregular, but has conformed somewhat to the growth of the city. In some decades the amount of building has been considerable, in others there has been almost nothing in the way of increased school facilities. On the whole, the amount of school construction has not been very great for a city the size of Wilmington.

There is some correlation between activity in school building and general business prosperity. For example, from 1887 to 1893 inclusive, a period of seven years, thirteen new buildings or additions to old buildings were erected; or an average of nearly two buildings per year. Business conditions in general during this period were unusually good.

The Expert vs. the Local Survey

Nearly all city, county, and state school surveys have concerned themselves very much about the conditions of the school buildings in the communities surveyed. This has been the natural and sane thing to do because, while a fine building does not constitute an excellent school, yet it helps to bring about the excellent school. On the other hand, an excellent school is impossible in a building so poor that it should be



MAP No. 2. LOCATION OF PRESENT SCHOOLS

condemned. Superior teachers and pupils in a fire-trap, disease breeder, or in a dangerously located school, may carry on for a while, but the chances of such a combination continuing very long, are remote indeed. Excellent improvements and important reforms have resulted from the recommendations made in survey reports prepared by experts from the universities. I know of no city where more than a fraction of the improvements planned for has been completely carried out. In fact, changes have had to be made in the program to fit new conditions which the surveyors did not and could not foresee.

Local research departments which have, during the past dozen years, become quite universal in the big cities and not uncommon in small cities, have, among their many other duties, found that they were expected to supply the superintendents and boards with information necessary to the intelligent planning and wise increase of school facilities. Consequently, many such departments have established a thorough policy of making a continuous rebuilding survey. Such a plan has some advantages over the "once over" survey by the university experts. The local research director, or an assistant, undoubtedly is familiar with the Strayer-Englehardt technic of rating school buildings and, if supplied with sufficient help and equipment, he can work out the necessary facts just as well or better than someone less familiar with the city.

In Wilmington, we started in 1923 to make a thorough rebuilding survey. We have spent much time in continuing our studies each year so that now it seems inevitable that a part of our effort each year shall be devoted to investigations and studies of our school building needs.

Surveying Rebuilding Needs

The first consideration in a rebuilding survey is a thorough study of existing buildings. We started out by making a map which would show the overlapping of the old school areas. Map 1 shows clearly that there were too many small elementary schools, located without plan, and greatly overlapping in the territory from which they drew their pupils. The standard area for a city school is a circle with a half-mile radius, the school at the center, and 90 per cent of the pupils living within the circle. This arrangement cannot be ironclad. Barriers like streams, railroads, arterial highways, manufacturing areas, high hills and bluffs—anything that constitutes any obstruction or a danger—require that the standards shall be only partly carried out.

The next points taken into consideration in our survey of local school buildings had to do with capacity of the entire school plant and other related information. We found the following situation:

The extra rooms needed in 1923	77
The enrollment in September, 1923	13,982
Inadequate rooms then in use	40
Number of part-time pupils	1,904
Number of portable schools	23

Map 2 shows the location of the 24 elementary schools designated by dots and numbers; and the number of portables attached to each school, designated by triangles. The crosses indicate

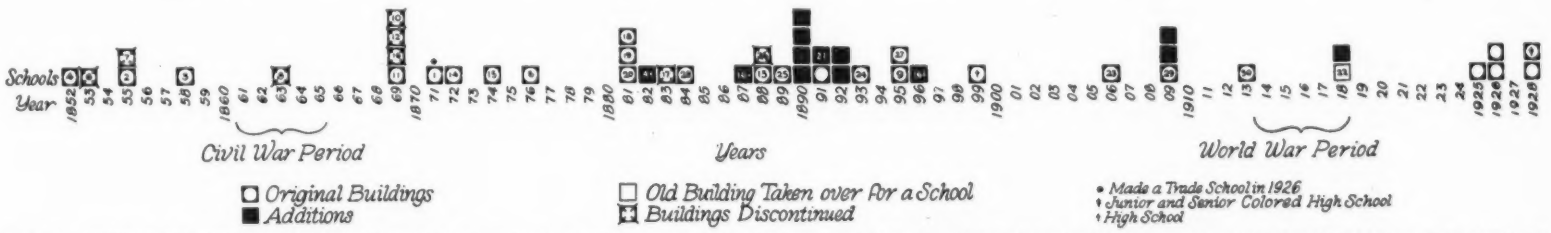
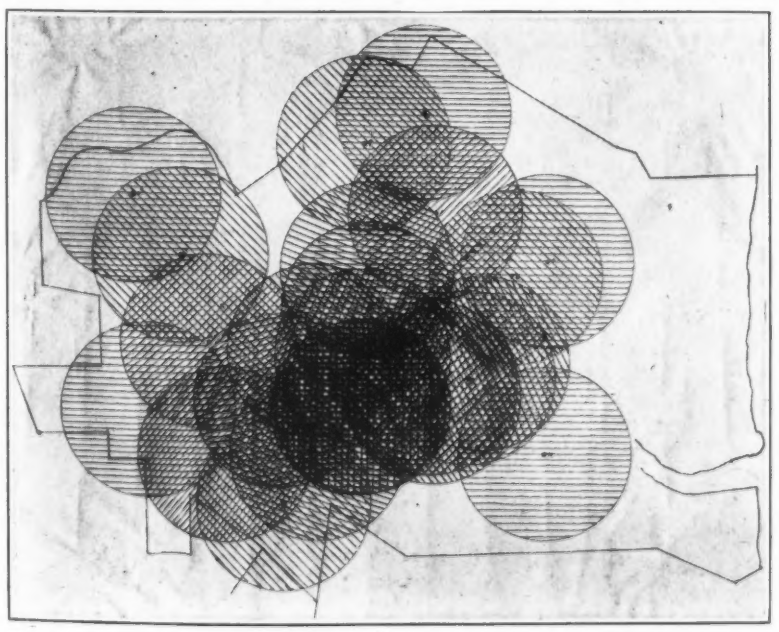
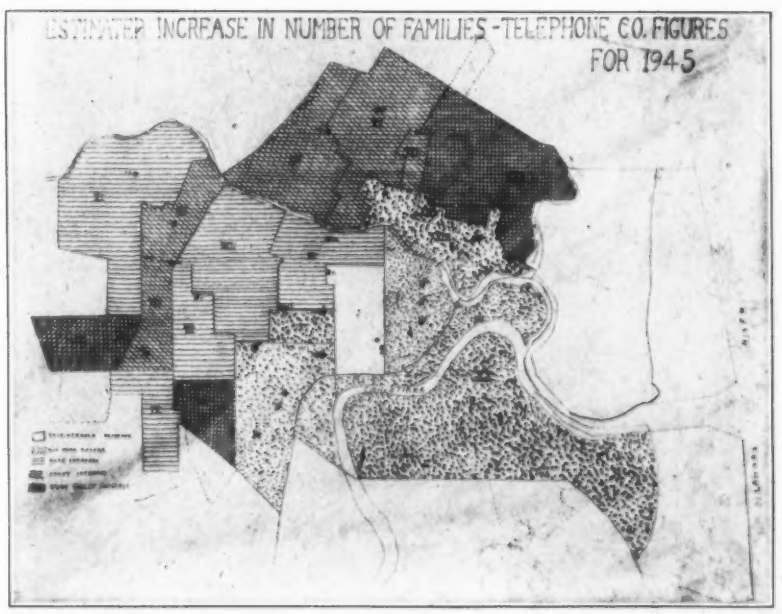


FIG. 1. STATUS OF THE WILMINGTON SCHOOL PLANT IN 1928. THE FIGURES IN THE SQUARES REPRESENT THE OFFICIAL DESIGNATION OF THE BUILDINGS



MAP No. 1. WHITE ELEMENTARY SCHOOLS IN TERMS OF OVERLAPPING. CIRCLES HAVE ONE-HALF MILE RADIUS



MAP No. 3. ESTIMATED INCREASE IN POPULATION BETWEEN 1926 AND 1945

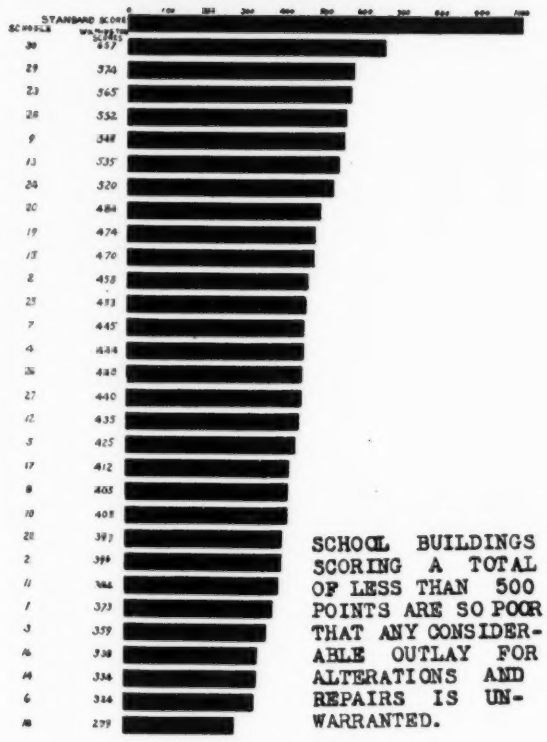


FIG. 2. SCORES OF PRESENT BUILDINGS

the number of extra rooms needed. This map helps one to see clearly the outstanding needs of the whole city. The location of the first new school actually built is indicated by the half-mile circle in the lower left-hand corner of the map. It is outskirted by schools that have many part-time pupils, many portables, and the need of many extra rooms.

The study of population growth is fascinating, and of late has become very popular. We read about it in books and magazines, hear it discussed in the pulpit and in the service clubs. There is one thing certain, population trends and growth must be treated in any school-building survey.

Forecasting Population Shifts

The Bell Telephone Company renders local communities a great service, wherever it operates, in making careful estimates of population growth. From the local branch of this great company we secured an accurate estimate of the number of families for stated intervals of years up to 1945, by market areas.

Map 3 shows the city divided into 22 telephone areas, also the estimated changes in the population for the year 1945. Area I is the only section of the city which promises to suffer a decrease of population. It is the clear section of the map in the center of the city. This is the heart of the business district and business is gradually crowding out families.

Areas II, IV, V, XX, XVII, and XVIII in the map are the oldest sections of the city. They are not expected to show much change in the number of families, because the land is nearly all occupied. In Section II, however, a very important change in population is taking place. The number of colored families is growing rapidly, with a corresponding reduction of white families. Since Wilmington has separate schools, this is, of course, an important tendency to note.

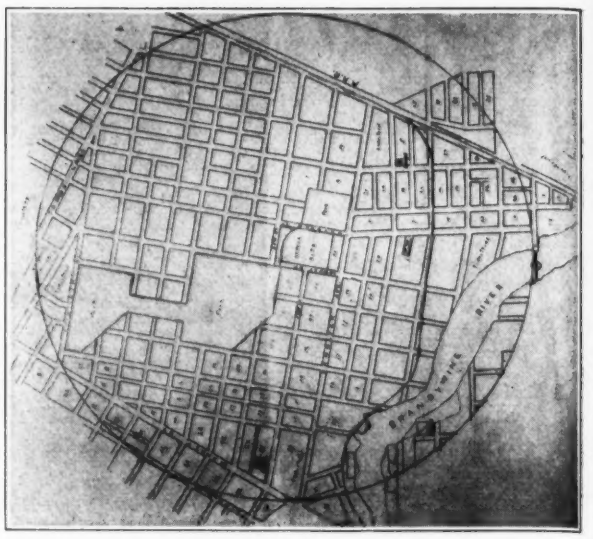
Areas III, XIII, VII, IX, and XI are expected to grow considerably. We constructed Map 3 several years ago, from the Bell figures, and already the forecasts are beginning to come true.

Areas VIII, XII, XIV, XV, and XVI are expected to have a heavy increase by 1945. Areas VI, X, and XIX are the three spots where the increase in population is expected to be the greatest. So far, these three areas are undeveloped, but the present building activities have almost reached their borders and are sure to completely fill the areas by 1945.

Evaluating the Old Plant

The next step in our survey was to evaluate our old buildings. This was done by means of the Strayer-Engelhardt score card. Our results are in the following table. Figure II shows the rating of the old schools from the highest to the lowest.

There are three approaches or points of first attack, from which to choose, when a city sets out to rebuild its schools. Some cities start at the top and build a grand new senior high school. Some cities begin at the bottom and build new elementary schools first; then they provide junior high schools, and last of all they build a senior high school. Still other cities prefer to strike into the middle and begin with a set of junior high schools; after these middle schools are completed they satisfy their elementary-school and senior-high-school needs. There is no best way for all places; in some cities, one plan is much preferable to the others, due to local conditions. If the people are opposed to junior high schools, it is better to build good elementary schools first. Unless the people are prepared to build a first-class senior high school, it is better to build the lower schools first. This does not mean that elementary schools should not be just as good as high schools, but they are usually smaller and less costly per pupil.

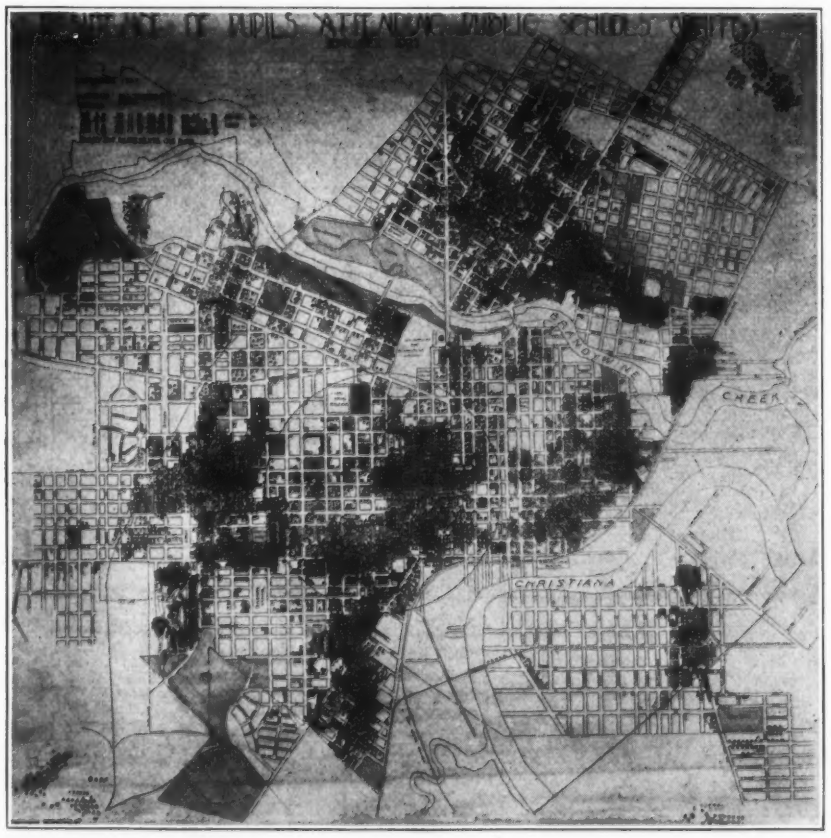


MAP No. 4. HALF-MILE CIRCLE AROUND SECOND NEW SCHOOL

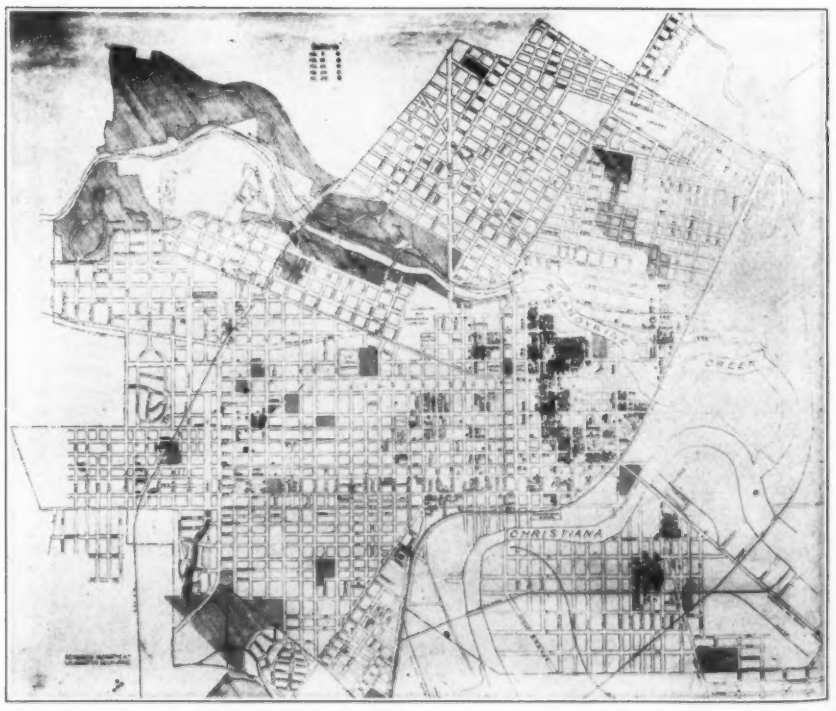
Wilmington began to rebuild its elementary schools first, and has so far completed three fine new buildings, named for eminent Wilmingtonians. The first school erected was the Thomas F. Bayard school, a gift to the city by Pierre S. du Pont. This started things because this school was given with the understanding that the city would build two others. All three schools are now occupied. They did away with most of the part-time classes, the makeshift rooms, and portables. They also enabled the board of education to abandon eight of the old buildings.

How Mr. du Pont Helped

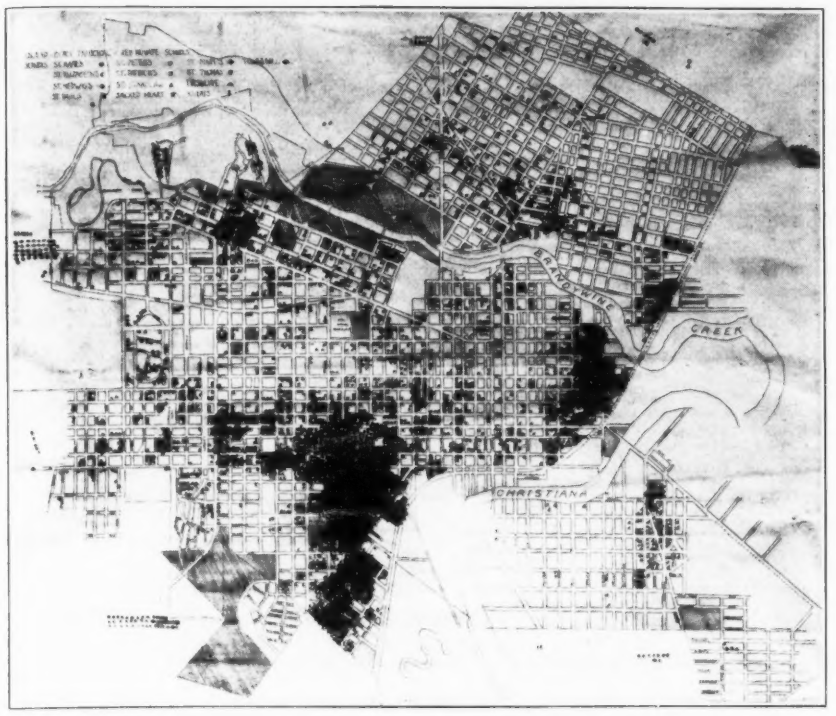
The first Pierre du Pont, at the request of President Thomas Jefferson, prepared an outline for a system of education for the United States. No wonder then that Pierre S. du Pont



MAP No. 5. DOT MAP SHOWING PRESENT RESIDENCES OF PUPILS ENROLLED IN THE SCHOOLS



MAP No. 6. HOMES OF ALL COLORED PUPILS IN FIRST SIX GRADES



MAP No. 7. RESIDENCE OF PUPILS ATTENDING PRIVATE AND PAROCHIAL SCHOOLS IN SEPTEMBER, 1927

of the twentieth century, a direct descendant of the illustrious Frenchman of the eighteenth century, who visited this country in Jefferson's time, is interested in public schools.

It is very common for our rich men to give of their millions to colleges, universities, private schools, and institutions; but it is extremely uncommon to find that they give generously to the public schools. Mr. du Pont has rebuilt nearly every colored school in Delaware and many white schools; and when it was proposed that our first new school should bear his name, he gently declined in favor of the illustrious statesman, Thomas F. Bayard, father of the present senator. The two other schools are the George Gray school and the William P. Bancroft school.

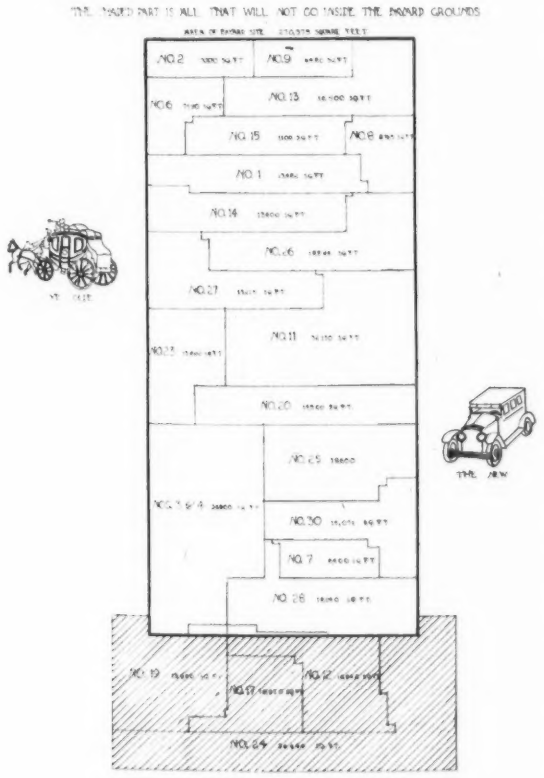


FIG. 3. BAYARD SCHOOL LOT

Mr. du Pont next prepared to give a new colored junior and senior high school, provided the city would build two other white schools. The new Howard school is completed and was occupied in the fall. The total cost of the site and building is about $1,000,000. The plant is one of the best public colored schools in the country. The two other white schools are "in the works" as they say in Connecticut. The State of Delaware has also come along with a $2,000,000 school-building plan of which Wilmington gets $800,000. There are still other hopes and possibilities, so that the material situation looks very favorable on the upper part of the Del-Mar-Va Peninsula.

The old Wilmington schools had little if any school lot other than what the buildings occupied. The Bayard school site which takes in three city blocks and the two intervening streets provides a community playground. The Bayard school site is nearly as large as those of all the other white elementary schools in the city combined.

Figure 3 shows the size and shape of the Bayard plot, and fitted inside of it are 18 of the 24 old school lots. All but six of them could be placed within the confines of the Bayard school lot lines. (School No. 10 is not shown.)

The Service Citizens

For a number of years Delaware has had a unique organization called the "Service Citizens of Delaware," financed entirely by a trust fund established by Mr. du Pont. Dr. Joseph H. Odell has been the director of this organization from its inception, and his work has been a great contribution to the welfare of mankind.

In his report of 1922, Dr. Odell said that Delaware was "in desperate need of new school buildings." At that time he found that "nearly every schoolhouse in the state is obsolete; most of them are entirely unfit for modern educational work; a great many of them are insanitary and unsafe." The educational committee of the Service Citizens, called "The Delaware School Auxiliary Association," has interested itself not only in the school problems of the state, but has made it very easy for the Wilmington governmental authorities, including the board of education and the city council, to go ahead with the new schools. Besides the generous direct gifts of Mr. du Pont, the association has furnished architectural plans and has supplied engineering skill in the construction of the new buildings. All of Mr. du Pont's gifts for new schools have been made through this organization.

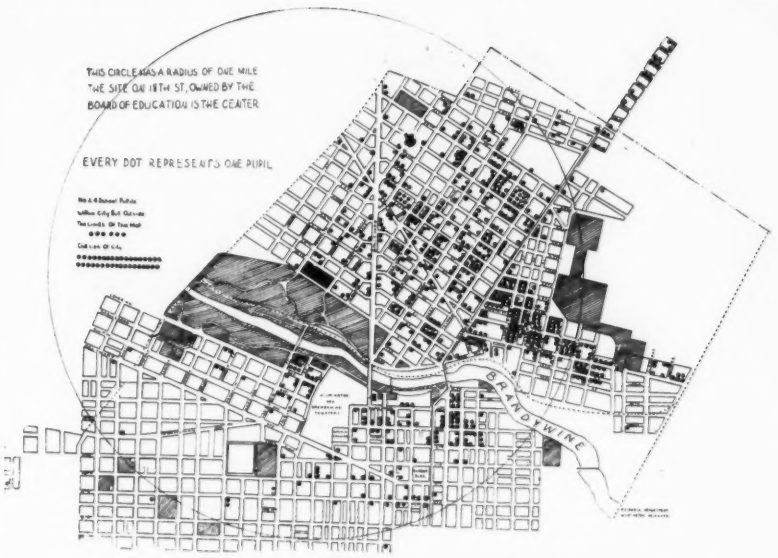


FIG. 11. RESIDENCE OF PUPILS ATTENDING PUBLIC SCHOOL No. 24

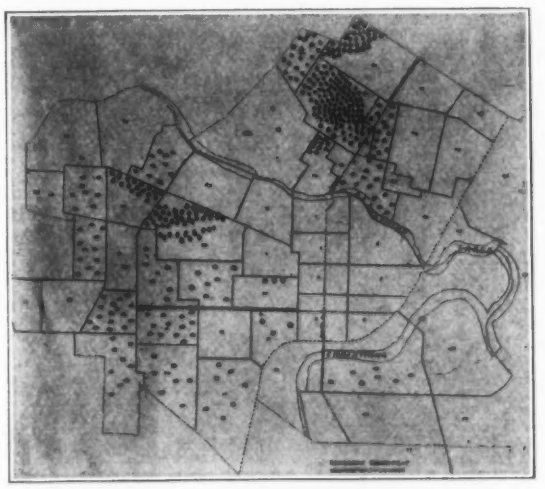
Mr. David A. Ward, superintendent of the Wilmington schools, has high ideals for the new schools and has worked hard to have these ideals realized. He has so far met with great success, and as a result, we have a group of new schools that would do credit to any city in the country.

Map 4 shows the half-mile area served by the second new building—the George Gray school. The school lot is not as large as that of the Bayard but proximity to a park makes it entirely adequate. The numbers on the blocks denote the number of families living in the blocks. The uninhabited section in the upper right-hand corner is Area XIX which will be filled by 1945.

Minor Population Studies

We have made scores of dot maps showing where the children live. These are necessary, because they show just where schools are needed. Map 5 shows, by blocks, the residence of every pupil who attended the public elementary schools in September 1927. The circle is a half-mile area in which a new school is badly needed. It will be the location for a new school.

(Continued on Page 165)



MAP No. 8. RESIDENTIAL BUILDING PERMITS FOR ONE YEAR



MAP No. 9. A TYPICAL BIRTH MAP MADE UP EACH YEAR

Making the School Building Educate

Warren S. Holmes, Warren Holmes-Powers Company, Architects, Lansing, Mich., Chicago, Ill.

The Corridors

The corridors of a school building have seldom been thought of as being capable of doing an important educational task. Corridors have been given little attention beyond serving as passages to get to and from the classrooms and providing cheap and convenient space for lockers. However, corridors, when well proportioned, well lighted and decorated with attractive color schemes, provide ideal wall surfaces for the display of good pictures and an occasional piece of statuary.

Built-in exhibit cases with provision for electric lighting located at frequent intervals are among the most effective built-in educational features possible in a school building. It is very desirable that one corridor, preferably on the first floor, be arranged for an exhibit corridor with provision on walls for hanging exhibits and extra corridor lights on a separate switch.

The bulletin boards placed in strategic locations also perform an important service. It is safe to predict that in the near future when the classroom work becomes more the pupil's responsibility and less the teacher's, a bulletin board will be required in the corridor for each classroom.

The ends of corridors should be kept open to admit the maximum of light and also to give the children a chance to rest their eyes after close application in the classrooms by looking out into the blue sky, the trees and the landscape in the distance. This has an educational value many times greater than the storeroom or small office often tucked into the ends of corridors.

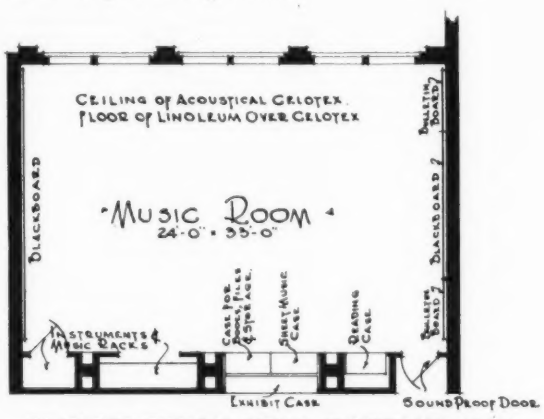
Sometimes extra width can be thrown into the corridors on the top floor where student traffic is least heavy to form a statuary hall.

A good floor for corridors, 10 to 12 ft. wide, is formed with a 6-ft. width of battleship linoleum laid in the center, with terrazzo border and base. This linoleum is quiet to walk on and does much to reduce the noise in classes passing.

The time consumed in passing of classes, usually thought of as lost so far as education is concerned, is made valuable use of by taking advantage of the educational opportunities provided by the corridors.

The Classroom

But still the greater part of education for children is performed in the classrooms under the direction of the classroom teacher, and obviously here is where the great change in school buildings is to take place if our changing theory is to be put into practice.



PLAN FOR TYPICAL MUSIC CLASSROOM, ALMA JUNIOR HIGH SCHOOL, ALMA, MICH.

While the conventional school theories of mathematics, of English, of science and of government can be committed to memory equally well in almost any classroom with good light, ventilation, and comfortable seating, it is evident that mathematics, English, science, history, etc., cannot be lived equally well in identical environments. The situations must be entirely different, the equipment used is different, the responses sought in the pupils are widely different, at least it is so in real life out of school, and they must be just as different in school or they cannot be real.

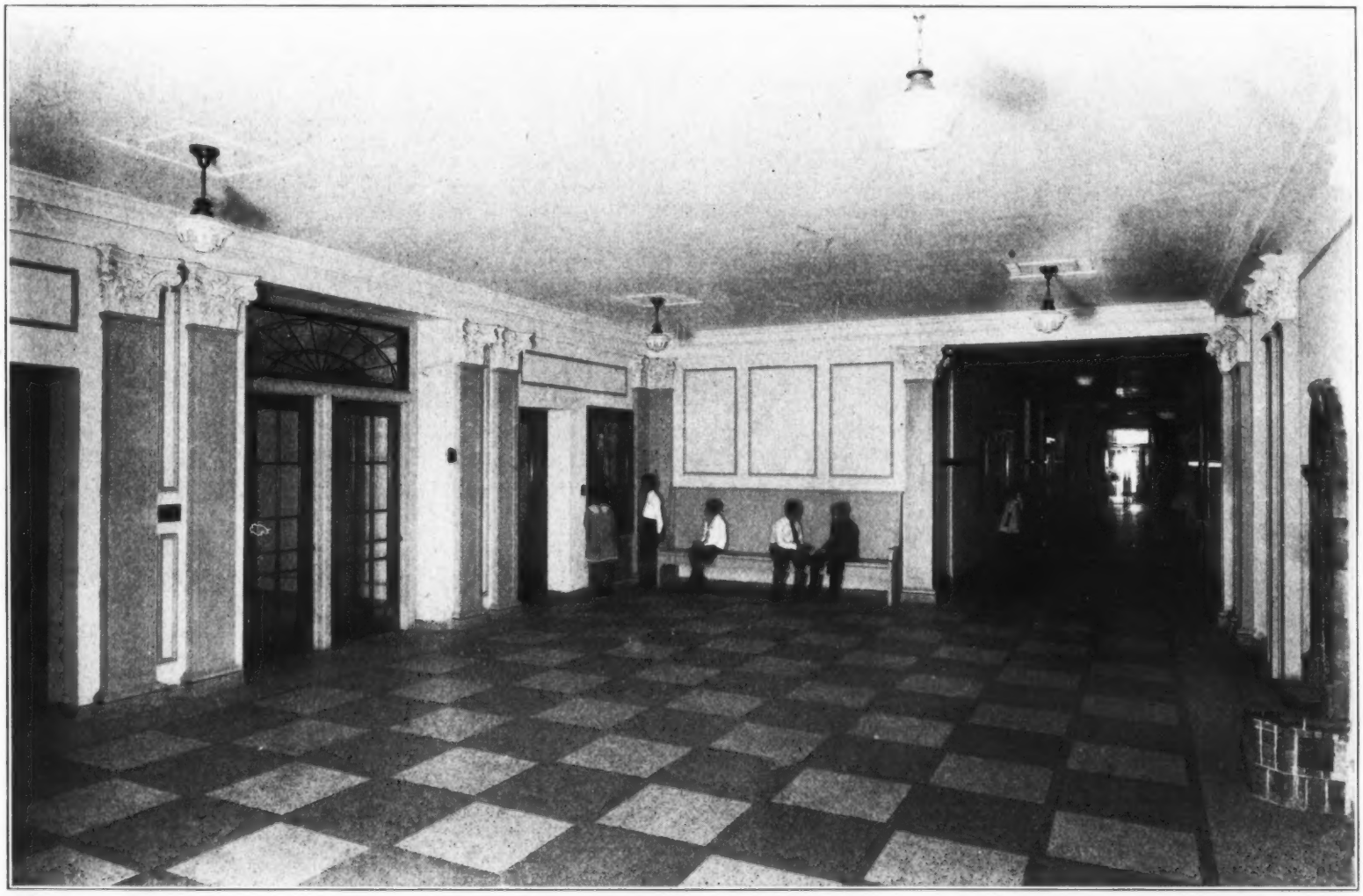
It has, therefore, become necessary to plan a history room, an English room, a mathematics room, rooms for music, for art, for science, etc., which differ from each other much as rooms for teaching science, shopwork, and domestic science have differed in the past.

To understand this it is necessary to take into consideration the immediate objectives for each subject; the teaching methods involved; the furniture, tools and equipment; the age of the children and the activities and plan the classroom into a specific environment that will best facilitate the results sought.

To do this and not complicate school procedure and not increase the cost of school buildings is taxing the school architect to the limit and making him a specialist hitherto unknown in school planning. The school architect becomes an educator as well as a builder, and his school buildings become actual working machinery for producing education.

The Music Classroom

Schools that have included serious courses in music have found it necessary to provide music rooms fitted with, not only the neces-



CORRIDOR IN ELEMENTARY SCHOOL

The foyer in the foreground has built-in seats, exhibit cases, and a wall fountain. The corridor has end light, exhibit cases, and provision for lighting and hanging art exhibits.

sities, but also the conveniences and setting that go to make a charactertistic and appealing music-room environment. Music, like literature, is a fine art and profits much by a proper setting. It is comparatively easy to provide the music room with the characteristic environment of the music studio.

The piano in a convenient location; a few pictures of music masters, both of the modern and ancient art; the exhibit and reading cases, and a good color scheme constitute the essentials. From this simple classroom thus described, of standard dimensions or a little larger, developments may be planned as requirements demand and money permits.

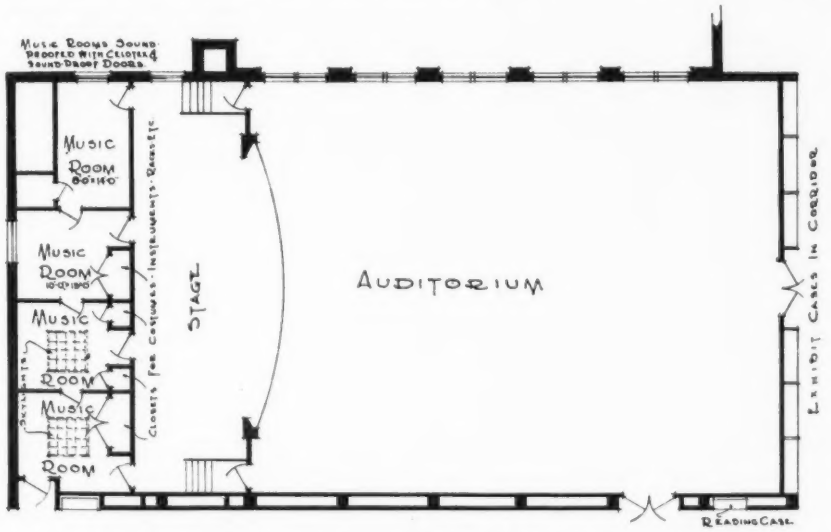
The plan and interior view of such a classroom is here shown. The ceiling and floors are soundproofed with acoustical celotex to prevent intereference with other schoolrooms because of sound. The corridor door is an Evans soundproof door and the room is located between the corner of the building and a stair. The instruments and music racks are taken care of in the storage closets back of wood doors, and the sheet-music library is stored in the case with glass doors.

A more elaborate music department is shown in the plan where the music room is made a small auditorium with stage and stage equipment. A number of small rooms about 10 ft. square are placed along the rear wall of the stage and open onto the stage through soundproof doors. These rooms are soundproofed and fitted with storage closets. They serve for individual piano and voice teaching and also for group practice work in orchestra and band. These rooms also serve as dressing rooms when the stage is used for dramatic work and the closets are used for permanent storage of costumes as well as for storing instruments, music racks, and sheet music.

Of far more importance than the size and architecture of the music classroom is its built-in facilities for instruction. For example: The reading case, containing some of the best music magazines and catalogs, is a prime requisite. The exhibit case when properly used is to the music department exactly what plate-glass windows are to the music store. Bulletin boards containing clippings, pictures, and items of interest to the music world are indispensable. A small amount of blackboard is desirable. Well-selected casts or friezes of musical subjects, purchased and put up by music clubs or music classes, not only add interest and atmosphere to the music room but form a worth-while project that never fail to appeal to music-loving pupils.



TYPICAL ELEMENTARY ROOM
For third to sixth grades, designed to facilitate a combined subject matter and activity program. Note the exhibit case, bookcase, reading case, teaching space, and seating.



PLAN OF SMALL AUDITORIUM, LINCOLN SCHOOL, YPSILANTI, MICH.
This type of room is of interest to private schools where individual instruction is possible.



THE MUSIC CLASSROOM
A practical classroom for recitation work with the atmosphere and environment of the music studio.



THE AUDITORIUM
Adapted for use in teaching subjects in appreciation.

Reorganizing the Small School Office

Chas. A. Sauer, Principal, Methodist High School for Boys, Yen Byen, Korea

There are five essential built-in features of a good office suite, none of which are to be found in the average rural consolidated and village school office. It is the purpose of this article to show how the superintendent or principal who does not inherit the type of office he would like, may reorganize it to secure greater office efficiency.

These five built-in features essential to a good school office are: (1) a waiting room or public space; (2) a general office, providing a place for clerical work and housing office equipment and machinery; (3) the private office equipped with a flat-top desk, a chair or two, providing a place for study and for conference with parents, teachers, and pupils; (4) a storeroom for the storage of school and office supplies, textbooks, and other equipment not in constant use; (5) a fireproof vault to protect reports, grade records, and other valuable papers against fire.

The typical school office in all but the larger schools will provide few if any of these. Almost invariably the superintendent has one room from one third to three fourths the size of a classroom unit. It is equipped with a desk and a few chairs, a bookcase, and perhaps a filing cabinet, an adding machine, and a mimeograph. His problem is to rearrange the office equipment and to obtain such other equipment as will permit him to work efficiently within the limitations of space provided by the architect.

Since the office desk is the chief piece of furniture in any office, let us first consider the principles of effective desk placement. First, the desk should if possible be placed near a window with the light coming from the left, so as to avoid eyestrain and glare. Second, the desk should be so placed that the entrance will be either at the front or at the right of the person seated at the desk. This gives the superintendent time for mental adjustment when a visitor enters before he is compelled to greet the newcomer. In the third place, the desk and other equipment should be so arranged that any visitor will naturally approach the side of the desk opposite the user where he finds less temptation to peer over or to disturb papers which may happen to be upon the desk. Last of all, the desk should not have on its surface nor in its drawers any books, supplies, stationery, blank forms, books, or catalogs, telephones and typewriters, which are used in common with other members of the school staff. Such articles of common usage should find a place elsewhere. Some offices are so poorly built that it is impossible to place the desk in accordance with all of these principles of desk placement. Under such circumstances one must decide upon the arrangement which will give the maximum of efficiency and service.

Let us now apply the principles of desk placement and office arrangement to specific and typical office situations. Where the school office is found on the first floor near the entrance and occupies less than one half a classroom unit in area, it will usually be rectangular in shape with windows at one end and the entrance at the opposite end.

One method of obtaining proper desk placement in such a room is to build a counter about 42 in. high and 18 in. in width across the room about 8 ft. from the window. A swinging gate or bar is placed at the right end of the counter as one faces the window. This counter thus incloses a space large enough for the office desk and chair, an office safe or fire-resisting vertical file for records, and chairs for the use of those in consultation with the superintendent. This secures in effect an inner and outer office without the darkening effect that results when a full-height partition is used.

The space under the counter is equipped with shelves for storage of supplies, books, and stationery. Part of the doors swing inwardly and some toward the outer office. The telephone is placed on the counter near the desk so as to be readily accessible to the principal when seated at his desk as well as to other members of the school who may have occasion to use it. If there is an interphone system in the school the push-button pad used to call out-stations should also be located here.

At the end of the counter farthest from the gate will be found the teachers' post office and exchange box. This will consist of pigeonholes about 4 by 6 in. in size and 10 or 12 in. deep, one for each teacher in the building, and also a larger compartment for oversize packages. Here the teachers will report once or twice daily for notices. Here also will be found the faculty bulletin board containing the general notices which the teachers are expected to read and to initial as an acknowledgment that they have seen them.

In the counter near the telephone will be found a slot marked *Letters*. Teachers and students are expected to drop into this slot any communications they may have when the superintendent does not happen to be in. In almost any office the use of written memoranda will save much time and the "Don't say it, write it" motto of the business office will save many minutes in the small school if the letter box for the principal and the post office and exchange box for teachers are properly used.

In such a counter the typewriter may be placed on a shelf which slides into a space under the counter, thus making it accessible from either side. The paper punch, paper cutter, pencil sharpener, and other similar articles of common use may likewise be placed in or on the counter where they are accessible for convenient use by either the superintendent or other members of the staff.

In many offices, the counter method just described will be objectionable because of the use

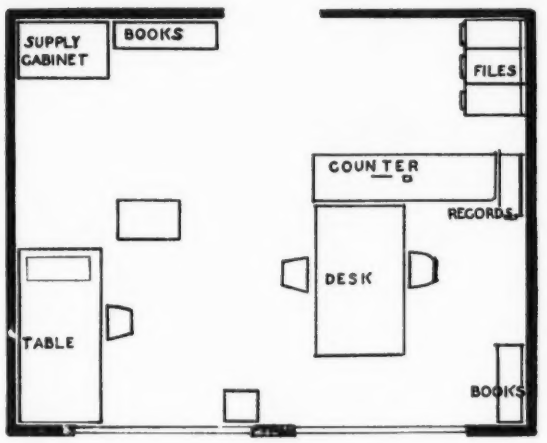


FIG. 3. COUNTER METHOD OF SECURING DESK PRIVACY IN THE SIDE-LIGHTED OFFICE

of the office for large conference groups or board-of-education meetings. In such cases the conference- or auxiliary-table method may be used. This substitutes a table for the counter. The table may be used for ordinary work purposes and may be cleared for board and faculty conferences. The method of placement is indicated in the accompanying drawings.

The discussion thus far has dealt with offices lighted on the end. Where the office is lighted on the side, the use of a short counter as indicated in diagram three will give effective arrangement. Or if desired counter-height files and counter-height storage units may be purchased and used.

In the outer office space should be placed the regular files, bookcases and the appliances for writing and duplication of office forms, letters, and other papers. There should be a hektograph or preferably a mimeograph for the use of the teachers as well as the school head. An adding machine is a necessity in an up-to-date school office and should have a place here. Here too, is to be found the professional library for the use of superintendent and teachers housed in bookcases, not on open shelves. The school library, however, has no place here; it should be housed in the various classrooms, distributed according to age of pupils for whom the books are intended.

Three or four vertical files of correspondence size will be needed to hold the research material that should be stored here. This will include catalogs of textbooks, school furniture and equipment, science equipment, gymnasium and playground equipment, general school and library supplies, and art supplies.

In these research files will be found the bulletins of the state departments of education, bulletins of various national educational bodies, extension bulletins from the agricultural colleges, bulletins from the state departments of health, and especially the farmers' bulletins from the United States Department of Agriculture. The use of a special double compartment bottom in the files will make it possible to file these so as to make them readily accessible. Material of this nature, being of value to all the teaching staff, should be available to all.

These files may also contain sample copies of standard tests and measurements and clippings from magazines and other sources of such material as may be used to illustrate various phases of teaching work. Booklets and literature from commercial firms, which have teaching value, may also find a place here.

For convenience in tracing drawings, maps, and charts which are to be duplicated on mimeograph or hectograph, a pantograph and a mimeoscope should be provided. The pantograph may be secured inexpensively at any stationery shop. Where funds do not permit the purchase of a mimeoscope, a local carpenter may be engaged

(Continued on Page 165)

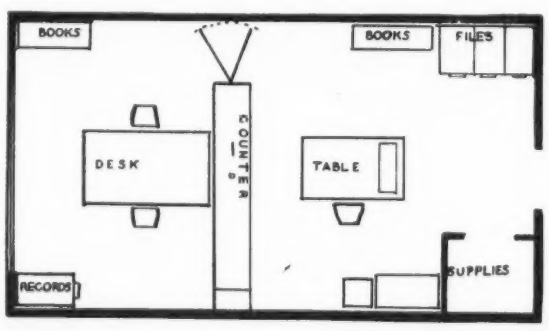


FIG. 1. SHOWING USE OF A COUNTER IN THE SMALL SCHOOL OFFICE TO SECURE DESK PRIVACY. TELEPHONE AND POST OFFICE BOXES ARE MOUNTED ON COUNTER.

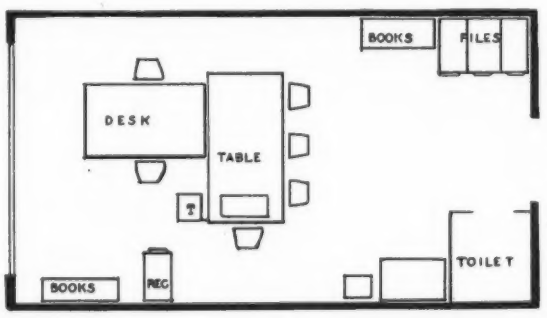


FIG. 2. SHOWING USE OF AUXILIARY OR CONFERENCE TABLE IN SMALL OFFICE TO SECURE DESK PRIVACY. TYPEWRITER IS MOUNTED AT CORNER OF TABLE AT T.

How Montreal Erects Elementary School Buildings

A. H. Milne, B.Sc., M.E.I.C., P.E.Q., Manager of Maintenance Department

The standard building as now supplied by the Protestant Board of School Commissioners for elementary-school purposes in the City of Montreal, has developed over a period of years from the old-type wood-construction building with hot-air heating, inadequate natural as well as artificial lighting, and with no mechanical ventilation.

The new type of building is approximately 225 ft. long by 75 ft. wide. It has three stories, a basement, and a sub-basement. The roof is of the hopper type, with tar and gravel surface. The three stories are used for teaching purposes and contains 33 classrooms, including a cookery room, a sloyd room, a principal's office, teachers' restrooms, lavatories, a medical room, a caretaker's storage room, etc. The basement, no part of which is below grade, is divided into playrooms, girls' and boys' lavatories, and a standard 35 by 60-ft. gymnasium. The sub-basement is used for heating and ventilating equipment and fuel storage.

The construction of our standard buildings is of the so-called fireproof type. We use solid brick walls, lined with 2-in. terra cotta. Interior partitions are made of 4-in. terra cotta. The beams are of concrete-incased steel. The floors are of reinforced concrete of the concrete-joist type, with metal lath on the underside for the plaster. The stairs are reinforced concrete with slate treads.

We have adopted as our standard for heating the forced hot-water system with wall radiators on the outside walls of each room. The ventilation is of the mechanical type. The air is recirculated and forced through air washers and ozone machines. Complete thermostatic control is provided. We find that this type of heating is the most economical and eliminates the necessity of employing night firemen.

Generous playgrounds are supplied and inclosed with chain-link fences, 7 ft. high. The surfaces of playgrounds are treated with 2 inches of Tarvia and crushed stone, with a final surface of sand. The loose sand is swept up. Grass plots with flower beds are located the full length of the front of all school buildings. Each school is supplied with a 40-ft. flagpole, centrally located.

The floors throughout the buildings, except for corridors, lavatories, and basements, are ⅞ by 2¼-in. tongue-and-groove birch or maple, treated with floor oils. These hardwood floors are laid on underfloor sleepers and cinder fill over the reinforced-concrete slab. The corridor floors are laid with a 2-ft. terrazzo band, 1½ in. thick, on either side, and the center portion is laid with ¼-in. brown battleship linoleum on cement finish. The lavatory floors are 1½-in. terrazzo, and the basement floors ¾-in. asphalt over the concrete slab.

Due to our climate we are obliged to use winter sash and we have found that the most suitable type is what we call the double double-hung English sash which is merely two sets of single English sash placed in the same frame and counterbalanced with cast-iron weights. Natural ventilation is quite simple with this type of window, as we are able to open the lower outer sash and the inner upper sash. The windows are installed on one side of the rooms only; the sills are 3 ft. above the floor and the glass extends to approximately 10 in. below the ceiling. We endeavor to make these windows as wide as possible, with the minimum of mullion except for a bearing pier for the one 20-in. I beam which runs across the center of each room. The total minimum area of glass in each classroom is not less than one sixth the floor area.

The inside corridor walls of all classrooms are constructed with two 4-in. terra-cotta walls, forming a space approximately 2 ft. wide. In this space are placed the ventilating ducts, pipes, lockers, and a cupboard for each classroom.

The following are standard details:

Classroom—25 by 30 ft., by 12 ft. high.

Gymnasium—35 by 60 ft., by 12 ft. high.

Doors—3 by 7 ft., oak flat hospital type.

Door frames—6-in. channels.

The walls and ceilings are plastered; the dadoes are cement-plaster 5 ft. 6 in. high. All sash are pine, painted. All interior trim is plain and is made of oak. Two exhibition rails are set at the back of each classroom; cove moldings are set at the floors; no picture rails are used; door closers are set on all classroom doors. Two ¼-in. slate blackboards are placed in each room, 3 ft. 6 in. wide—one blackboard directly behind the teacher and one on the wall opposite windows. The standard heights, from chalk rail to floor, are 40 in. for the teacher's board; 30 in. for first- and second-year pupils'; 33 in. for the third and fourth years; 34 in. for fifth and sixth years.

Our seating standard require 48 seats per classroom for first, second, third, and fourth years; 42 seats per classroom for fifth, sixth, and seventh years. The seats are installed to have the light come from left-hand side of the pupils.

Steel lockers, 16 in. deep by 5 ft. high, are provided in the corridors outside classrooms. The lockers are set in sections of four and are provided with sliding disappearing doors. Padlocks are used for locking. All padlocks for each room are similar and all padlocks for a school building are master-keyed. The hook rails at the back of the lockers have hooks spaced approximately 8 in. on center.

For artificial light, six 100-watt nitrogen lamps are installed in each room, controlled by three switches, two lights on each switch. The shades are inclosed and set so that the bottom of the bowl is 9 ft. above the floor.

Standard electric-clock systems are used throughout. One secondary clock is placed in each room and controlled by a master clock located in the principal's office. Automatic charging equipment, connected to the city service, is used for power. We have one clock system in continuous service for 35 years, another for 34 years, and many others with shorter satisfactory service.

For fire-alarm purpose, push button and bells are placed on all floors. Any one button rings all bells. All exits are equipped with panic bolts.

Standard colors for all schools have been adopted as follows:

For the first coat, all walls and ceilings are treated with flat lead and oil sealer.

The finish coats on the ceilings are ivory water paint. The walls are painted light buff with water paint, stipple finish. The dadoes are painted blueish gray, gloss finish, 5 ft. 6 in. high, with a 2-in. navy-blue band at the top, carried throughout the buildings.

The outside woodwork is painted bottle green. All inside woodwork except doors and trim, is painted pearl gray. The interior doors and trim of oak are stained and varnished. All outside metal work is coated with black metal paint.

At least two coats of paint are always applied, and the first coat is of an entirely different color from the finish coat. Thus, the outside metal work is given one coat of red-oxide paint before the final coat of black is applied.

All windows are equipped with translucent shades.

Kindergarten classes are located on first floor and classrooms for older pupils are placed on the upper floors. Special rooms for sloyd and cookery, where each pupil goes only once or twice a week, are located on the top floors.

The writer has endeavored to give a general idea of our standard elementary schools in the hope that it will be of service to some of his confreres.



THE HERBERT SYMONDS SCHOOL, MONTREAL, CANADA

Some Details of School Libraries in Southern California

W. P. Childs, Alhambra, Calif.

The purpose of this investigation was twofold. The writer sought to determine, first, the physical characteristics of location, size, seating capacity, equipment, and general content of the libraries of 25 high schools in Southern California; second, to analyze the information for acceptable elements which might be used to answer questions like the following:

1. What shall be the location, size, shape, height, and finish of the library?
2. What shall be the number and size of windows, doors, skylights? What shall be the number of outlets, and the amount of wattage of the artificial lighting?
3. What material shall be used for floor covering?
4. What kind, and size, of shelving shall be used, and where shall it be located?
5. What are the proper ratios of (*a*) floor area to the seating capacity, (*b*) books to shelf space, (*c*) pupils to number of books, (*d*) circulation of books to number of pupils, (*e*) feet of shelving to number of students, (*f*) window area to floor area, (*g*) table area to seats?

In order that the study might present a true cross section of conditions, both large and small schools were visited. The enrollment of the schools varied from a school of only 340 students, to one with an enrollment of 3,366. The average daily attendance ranged from 256 to 3,044. The number of girls enrolled in each school exceeded the number of boys, with the exception of a technical school, in which most of the subjects offered were of particular interest to boys. The number of teachers employed ranged from 18 to 142.

Of the 25 schools, 9 had the library located on the first floor, 1 on the third floor, and 15 on the second floor.

The Library Room

The library almost necessarily enjoys the advantages of fireproofing, or suffers from the inflammable character of the high-school building of which it is a part. Only 5 of the libraries studied were in fireproof buildings; the others were in Class C structures.

For library-floor coverings, 12 of the schools used battleship linoleum, 1 used cork carpet, and the other 12 used no special covering. Where no covering was used, 2 of the floors were of pine, and 10 of hard maple. The librarians and school authorities seemed to prefer battleship linoleum as the best type of floor covering. Cork carpet was spoken of as objectionable on account of its softness, and its readiness to receive stains.

The wall heights of the rooms varied from 12 to 24 ft., the average height being slightly more than 15 ft. One library had a wall height of 24 ft., two of 20 ft., four of 18 ft., two of 16 ft., nine of 13 ft., and six of 12 ft.

The latest figures available in the schools showed that the average number of books, without regard to the size of the schools, was 6,629. On the same basis, the average circulation per year was 25,530. The average circulation per student enrolled was 20.6 books, while the circulation per student in average daily attendance was 30.3 books.

The smaller schools seem to enjoy greater circulation per student enrolled than the larger schools. The following table provides a clear picture of the situation.

No. of Schools	Enrollment	Average No. of Books	Average Circulation	Circulation Per Pupil Enrolled	Circulation Per Pupil in A. D. A.
4	500 or less	2.720	17.450	45.9	53.4
6	500-1000	3,411	18.337	23.8	28.1
5	1000-1500	7.551	37.395	29.0	32.0
2	1500-2000	6.736	.....	17.3	19.3
3	2000-2500	7.407	17,433	7.4	8.4
4	2500 or more	12.576	31.860	10.5	12.1

It is possible that the students in the smaller schools make more use of the books in the library than do students in the larger schools, because they do not generally have access to public libraries.

Size and Seating Capacity

In the libraries under consideration, it was found that the smallest amount of floor area allowed per student was 16.3 sq. ft.; the largest, 37.9; the average, 25 sq. ft.

The seating capacity of many of the libraries had evidently not been adjusted to the seating capacity of the schools. One school showed a library seating of only 4 per cent of the total enrollment; another had seats amounting to the extravagant number of 30 per cent of the school. The average seats available in the library were 11 per cent of the enrollment.

Nearly all the schools used oak chairs. The table tops varied in size from 3 by 5 ft., to 3 ft. 6 in. by 10 ft. The average size was about 3 by 7 ft., or 7 ft. 6 in. The tendency in the newer libraries is to increase the length of the table for the sake of economy and appearance. The more recently built high schools had tables 3 by 7 ft. or 7 ft. 6 in.

The table space allowed per student varied from 2.5 sq. ft., to 4.44 sq. ft. The average allowance was 3.40 sq. ft. per student. The number of seats placed around the tables varied from 2 to 10. One school had tables seating 2 pupils, 6 schools had tables seating 4, again 3 had tables seating 5 pupils, 15 had tables seating 6, 1 had 7 seats at each table, 4 had tables seating 8, and 3 had tables seating 10. Included in the above were 5 schools which had tables seating different numbers in the same library. The average number of chairs placed at each table was 6.

Only 2 schools were using all homemade bookshelving. In nearly all cases, the bookshelving, when purchased, was light-colored oak. All but a very few sections were 3 ft. wide by 6 ft. 10 in. high. All schools had one or more odd-size sections of shelving to fit odd spaces.

Shelves and Book Capacity

The number of books per square foot of shelving available varied from 17.78 to 2.74 books. A square of shelving is a portion of shelving 12 in. square, measured on the face of the shelving, or the equivalent wall space covered by the shelving. The school with the smallest number of books per square foot of shelving was new and did not have its full quota of books for the library. The school with the largest number of books per square foot of shelving had many small books, catalogs, and pamphlets on its shelves.

The number of square feet of shelving allowed per student enrolled varied from .29 sq. ft. to 1.41 sq. ft. The average amount of shelving allowed was .73 sq. ft. per student enrolled.

A total disregard of good lighting was evident from a study of the window area. In one school, the windows are 4 per cent of the floor area. The opposite extreme is a building in which the proportion of window area represents 26.4 per cent of the floor space. The average window space was 13.99 per cent of the floor area. Three schools use skylights in the library. Thirteen schools had sliding types of windows, 10 had a swinging-sash type, and 7 used some form of casement type.



SANTA MONICA HIGH-SCHOOL LIBRARY, SANTA MONICA, CALIF.

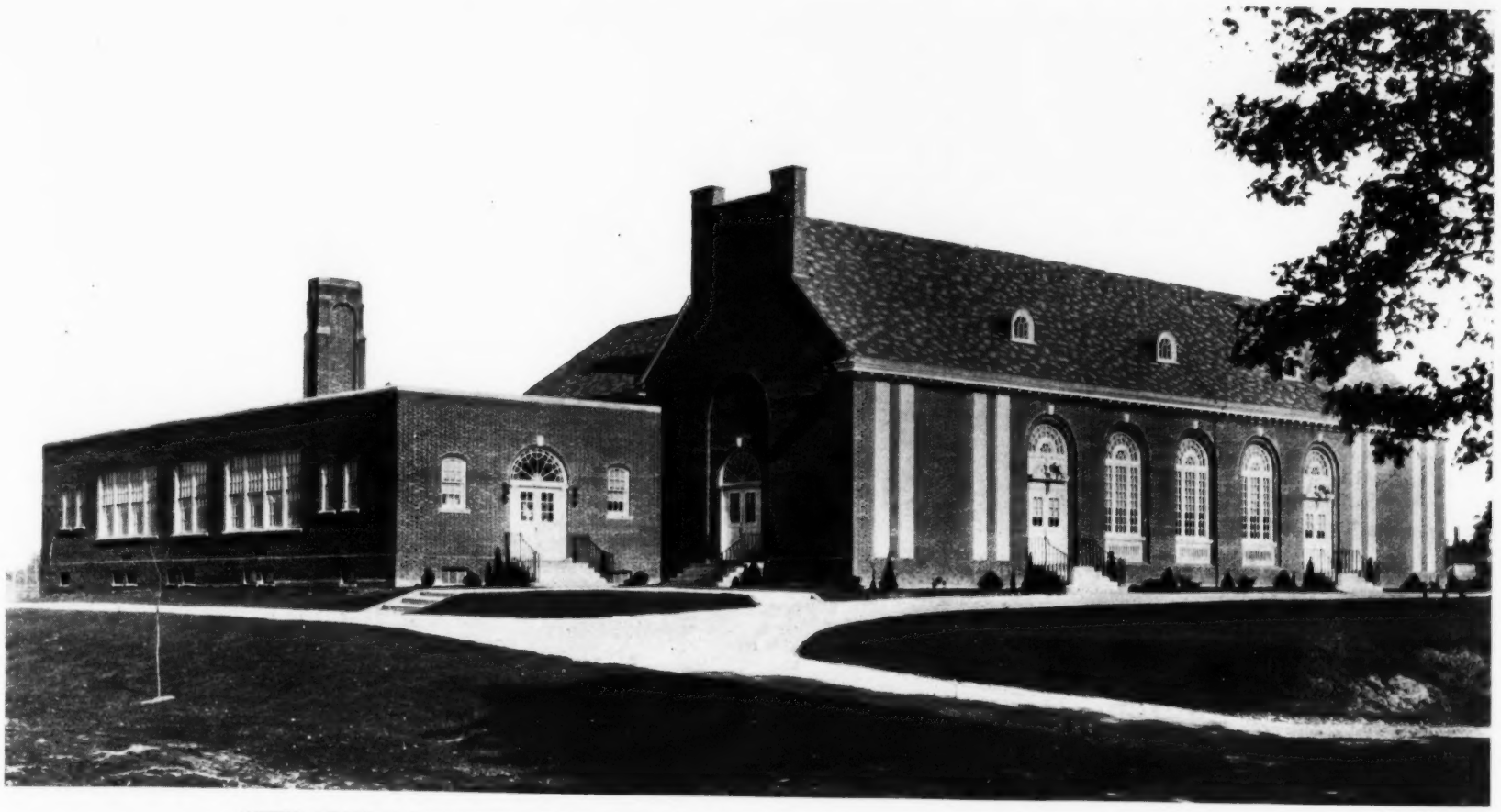
The artificial lighting in the libraries studied was found to be planned to supplement the natural light. The number of outlets varied from 2 to 25. The average floor space per outlet was 299.1 sq. ft., or for practical purposes, 300 sq. ft. The number of watts per outlet varied from 100 to 250; 18 schools used 200 watts. The number of watts per square foot of floor area varied from .2 to 1.29. The average number of watts per square foot of floor area was .62. In general, the writer believes that the libraries are insufficiently lighted.

Entrances and Doors

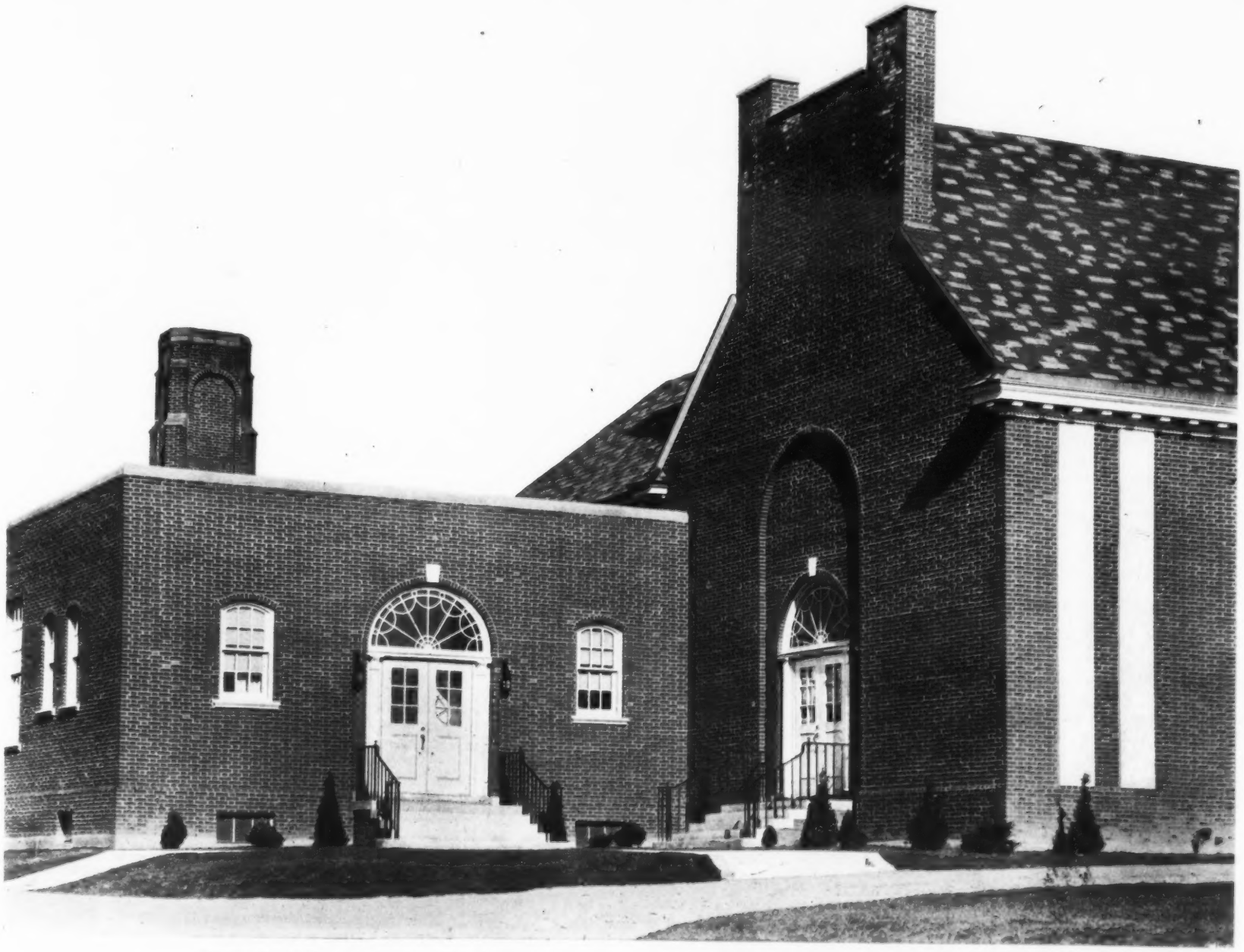
The libraries showed no uniformity in the location of entrance doors. Most of the entrances are in the side of the library. All except one of the entrances were from corridors. Twenty-three of the libraries had double doors, 5 by 7 ft., swinging both ways. Eighteen of the doors had glass in the upper part, one door was of the French type, and six were solid-panel doors. Twenty-four doors were pine and one was oak.

All the libraries had 3 by 5-in. card catalog files, but the amount of filing space varied greatly. The number of drawers varied from two in one library, to 45 in another library. Fourteen of the schools had a cabinet of 15 drawers. The card capacity per drawer was 1500 light-weight cards, or 1100 medium-weight cards, or 900 heavy-weight cards.

(Continued on Page 162)



UPPER LEACOCK TOWNSHIP JUNIOR HIGH SCHOOL, UPPER LEACOCK TOWNSHIP, LANCASTER, PA.
Henry Y. Shaub, Architect, Lancaster, Pa.
(Grand Prize and First Prize, Class A—Common Brick School Competition, 1928.)



UPPER LEACOCK TOWNSHIP JUNIOR HIGH SCHOOL, UPPER LEACOCK TOWNSHIP, LANCASTER, PA.
Henry Y. Shaub, Architect, Lancaster, Pa.
(Grand Prize and First Prize, Class A—Common Brick School Competition, 1928.)

Prize School Buildings of the Common-Brick Competition

Representative Work of Best School Architects Shown Among Prize Winners

School architecture in the United States had distinctly utilitarian beginnings. Unlike the courthouse, the library, and the city hall, the school has been one of those necessary structures which has not been considered a show place or an opportunity for the expression of community pride. This is the chief reason why it is difficult to find school buildings more than a generation old, which can be pointed out as examples of notable design and planning.

While good design and the skillful use of suitable materials are still qualities lacking in many newer school buildings, it is a fact remarked by competent observers that American schools have improved immensely within the last generation, and that more rapid progress has been made since the world war than during many years previous. The improvement has resulted largely from the vastly improved status of the schools as a civic and social force, and from the interest which they have aroused not only among such groups as patrons and architects, but also among forward-looking business men and manufacturers.

It is typical of the interest which schools are arousing that the third annual architectural competition of the Common-Brick Manufacturers' Association held during the summer and fall of 1928, was devoted to school buildings. Such a competition would not have been possible if there had not been erected in recent years many fine schoolhouses worthy of study by architects and deserving of public commendation by the award of substantial prizes. In a sense, it is incidental that the buildings admitted to the competition were limited to those faced with common brick, except that this material represents one of the oldest and most permanent building materials, and its use reflects the desire of architects and school authorities to build for beauty, economy, and permanency.

The Competition

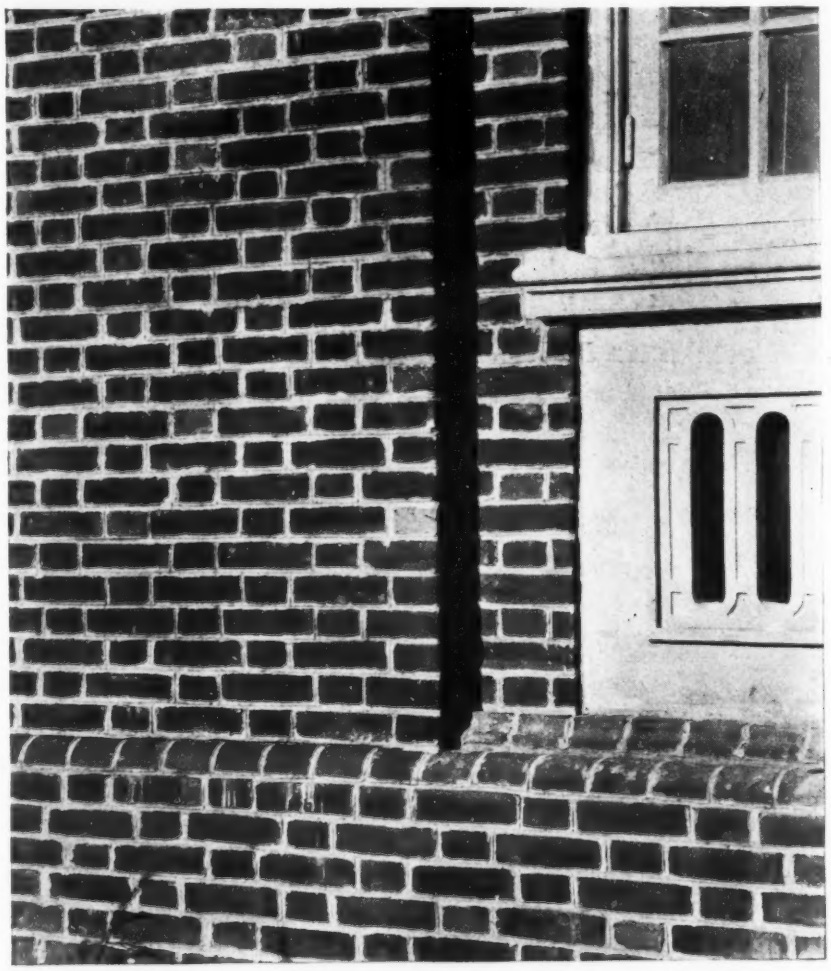
The competition was open to all types of school buildings in which the majority of rooms are used for classroom purposes. Large and small buildings were admitted. The prizes were divided equally between Class A, comprising small buildings of less than 700,000 cubic-feet volume, and Class B, calling for structures of a cubiture in excess of 700,000 cubic feet.

The smaller buildings were especially designated for recognition because of the civic value of skillfully designed and well-built schools in rural districts and small towns where frequently the best type of architectural service is not available, or is not appreciated. The entry of large buildings was encouraged because these necessarily offer architects a broad opportunity for fine treatments of mass and detail. A grand prize of $500 was offered for the first-prize winner in either class considered the finest in the entire competition. For both classifications, the first prize was $500; the second prize, $250; the third prize, $100. Four honorable mentions in both classifications received $50 each.

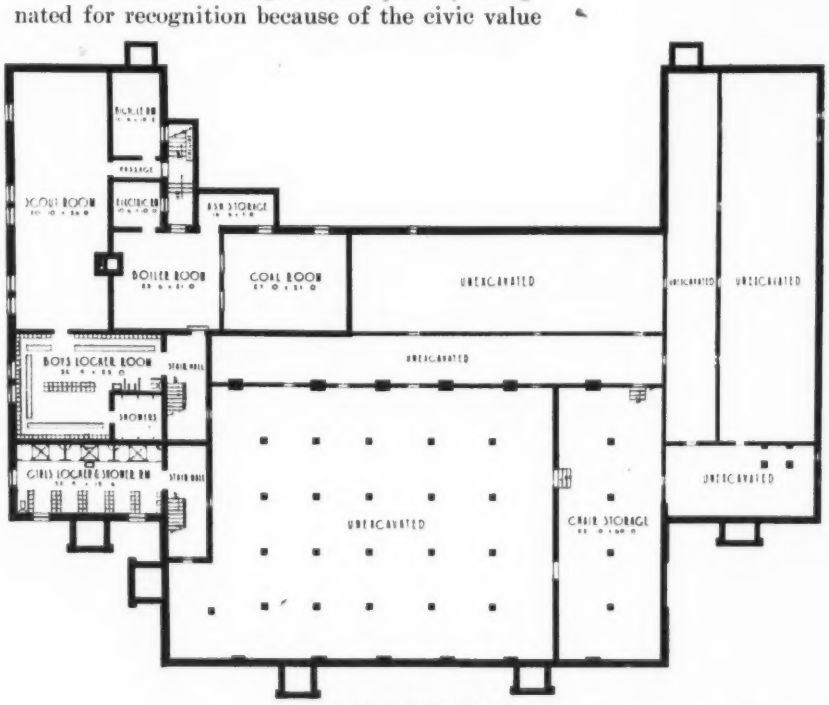
The announcement of the program contained among others, the following conditions:

"It should be noted that the buildings shall be those used predominantly for classroom purposes, which excludes structures used solely as dormitories, libraries, gymnasiums, and other accessory buildings. It would include, however, buildings which may contain these facilities as accessories to space devoted primarily to instruction purposes. The competition is open to public, parochial, and private school buildings and buildings for preparatory schools, colleges, and universities, falling within the limitations above defined.

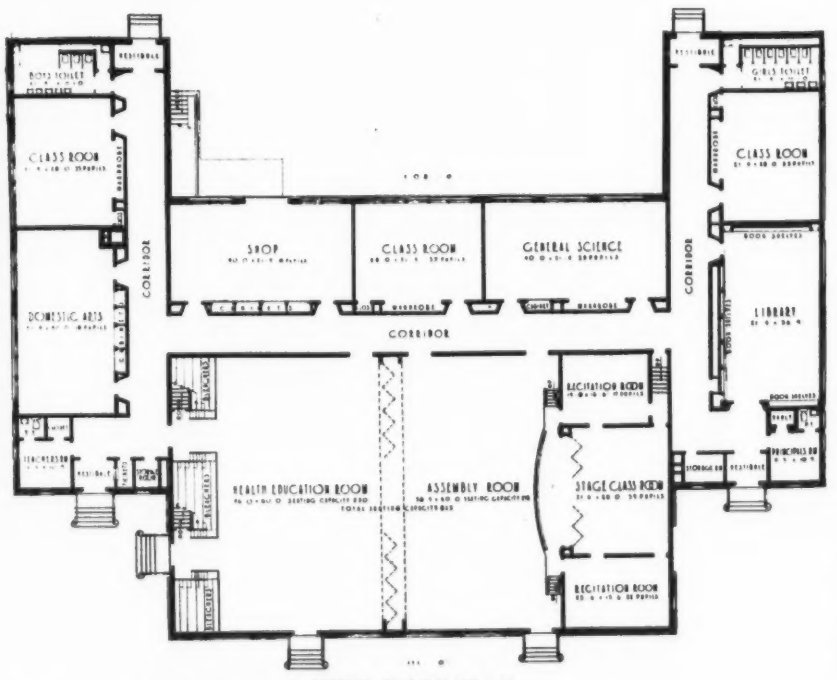
"This third common-brick competition, like the preceding competitions, is quite simple in its na-



DETAIL OF BRICKWORK, UPPER LEACOCK TOWNSHIP JUNIOR HIGH SCHOOL, UPPER LEACOCK TOWNSHIP, LANCASTER, PA.

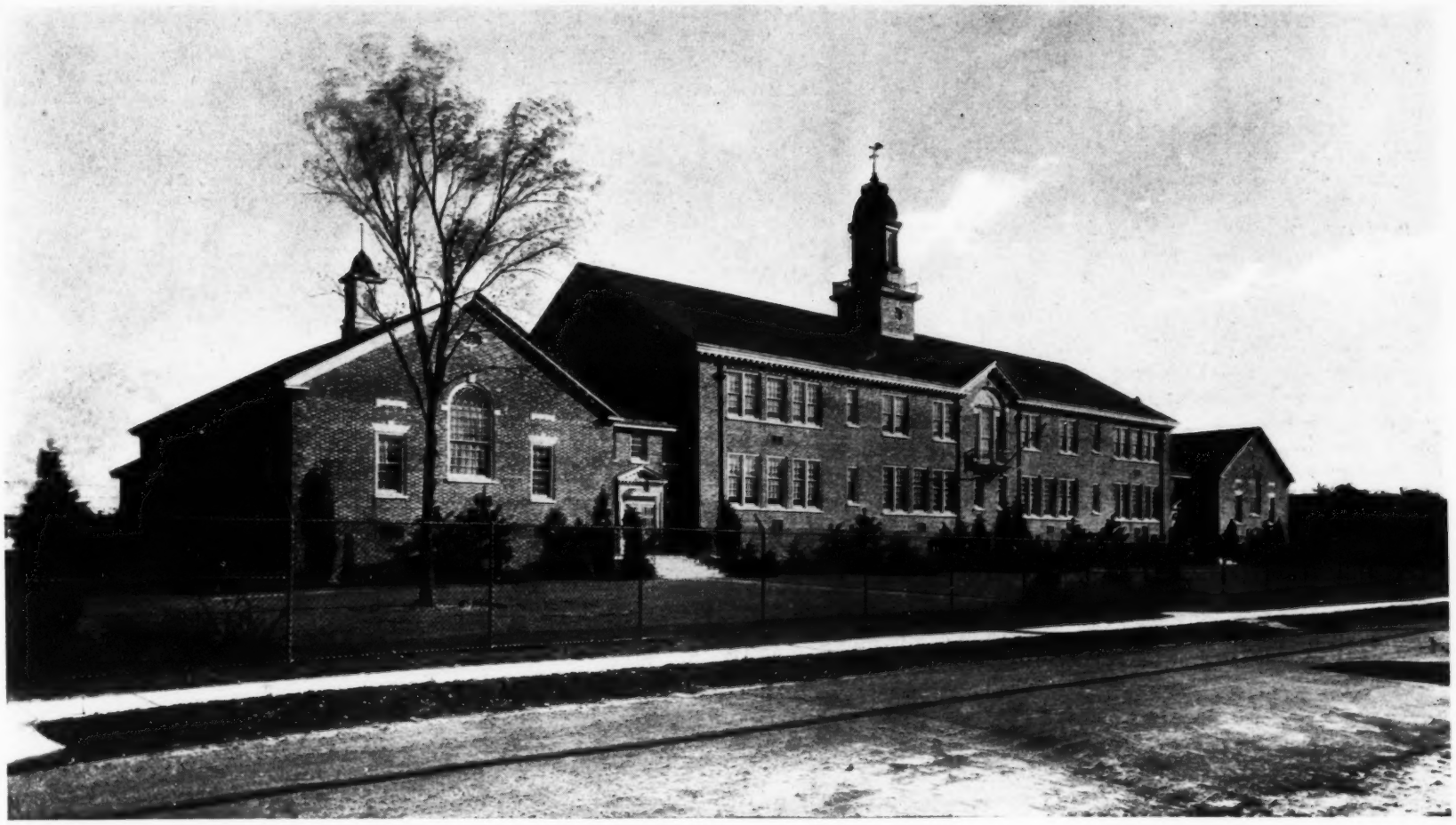


BASEMENT PLAN



FIRST FLOOR PLAN

UPPER LEACOCK TOWNSHIP JUNIOR HIGH SCHOOL, UPPER LEACOCK TOWNSHIP, LANCASTER, PA.
Henry Y. Shaub, Architect, Lancaster, Pa.



PUBLIC SCHOOL No. 11, YONKERS, N. Y.
G. Howard Chamberlin, Architect, Yonkers, N. Y.
(Second Prize, Class A—Common-Brick School Competition, 1928.)

ture, because instead of sketch plans for photographs, and floor plans of school buildings, already constructed, or which may be completed in time to submit the required entries before the closing date, November 6, 1928. From the point of view of the architect, it should prove to be an interesting type of competition because it requires comparatively little time, the project resolving itself into the simple procedure of obtaining good photographs and submitting them with floor plans and the cubic footage.

"The purpose of this competition, as sponsored by the common-brick manufacturers' association of America, is to bring together an interesting collection of well-designed school buildings in which common brick has been used for the exteriors with any type of wall construction.

"During the past few years many school buildings have been erected with common-brick exteriors to which interest has been contributed by the skillful design and the ingenious disposal of various brick patterns, joints, bonds, and textures. These buildings are all eligible for the competition regardless of their present age, and because of its long duration it is possible to enter school buildings which may be constructed during the spring, summer, and early fall of 1928. It should be noted that all exteriors are to be judged on their architectural merit, without respect to the landscape treatment or other factors, so that even if the surroundings have not been completely developed, the new school building has an equal chance to win in this competition with those that have been completely finished."

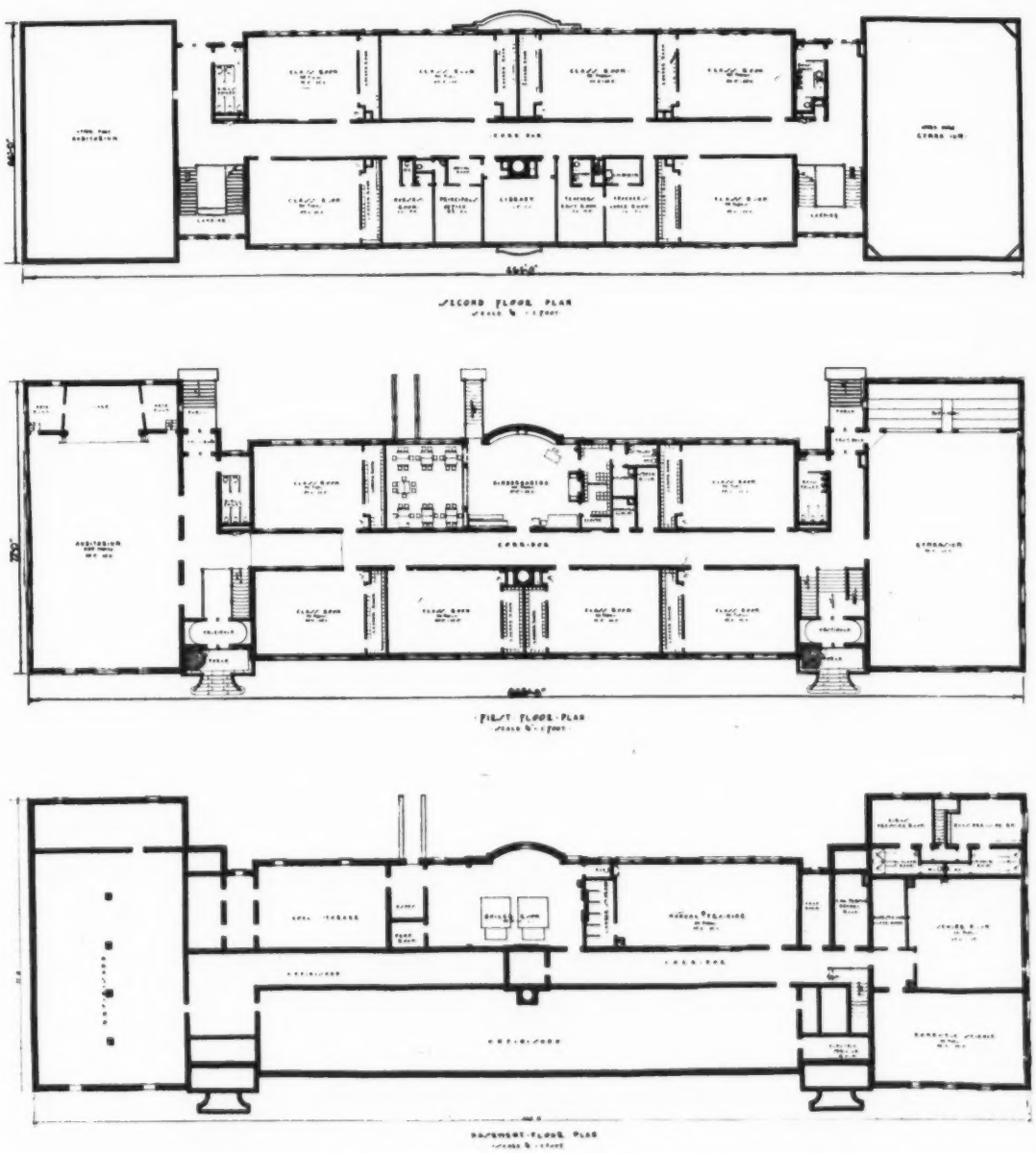
The Jury

The jury of award consisted of the nationally known architects: Mr. James O. Betelle, F.A.I.A., of Guilbert & Betelle, Newark, N. J.; Mr. Walter R. McCornack, A.I.A., consulting schoolhouse specialist, Cleveland, Ohio; and Mr. Wm. B. Ittner, Jr., of Wm. B. Ittner, Inc., St. Louis, Mo. The findings of this jury express quite as well as do the accompanying photographs and plans, the satisfactory character of the buildings submitted.

November 12th, 1928.

Mr. R. P. Stoddard, Secretary-Manager,
Common Brick Manufacturers' Assn. of America,
Cleveland, Ohio.

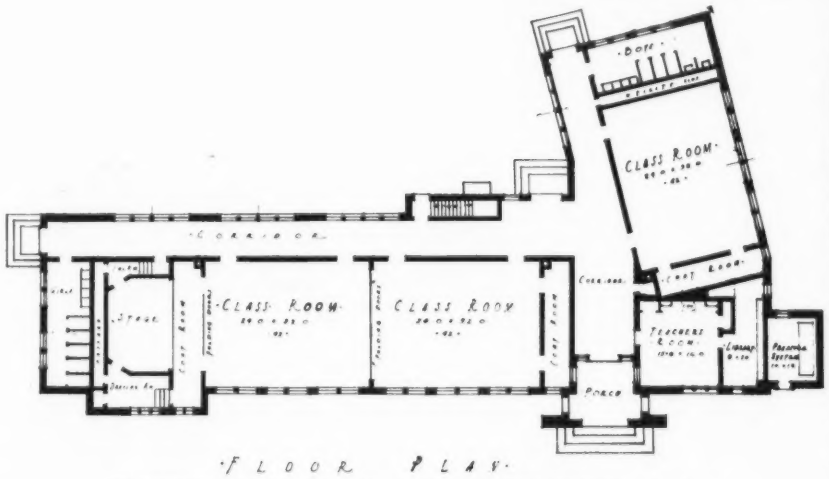
Dear Sir: In pursuance to your request, the undersigned met this day at the Hollenden Hotel at Cleveland to review the photographs and plans



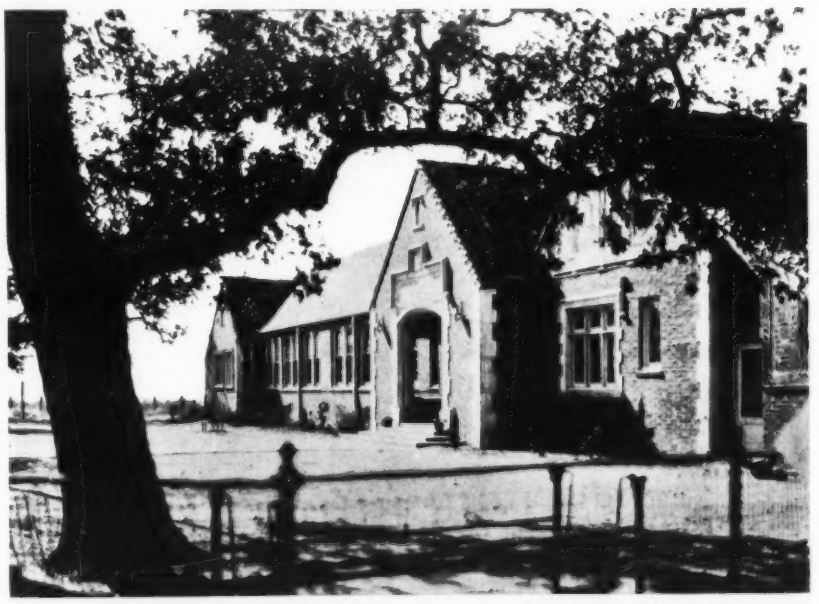
PUBLIC SCHOOL No. 11, YONKERS, N. Y.
G. Howard Chamberlin, Architect, Yonkers, N. Y.
(Second Prize, Class A—Common-Brick School Competition, 1928.)



HARMONY GROVE SCHOOL, SAN JOAQUIN COUNTY, CALIF.
Victor Galbraith, Architect, Stockton, Calif.
(Third Mention, Class A—Common-Brick School Competition, 1928.)



HARMONY GROVE SCHOOL, SAN JOAQUIN COUNTY, CALIF.
Victor Galbraith, Architect, Stockton, Calif.



HARMONY GROVE SCHOOL, SAN JOAQUIN COUNTY, CALIF.
Victor Galbraith, Architect, Stockton, Calif.

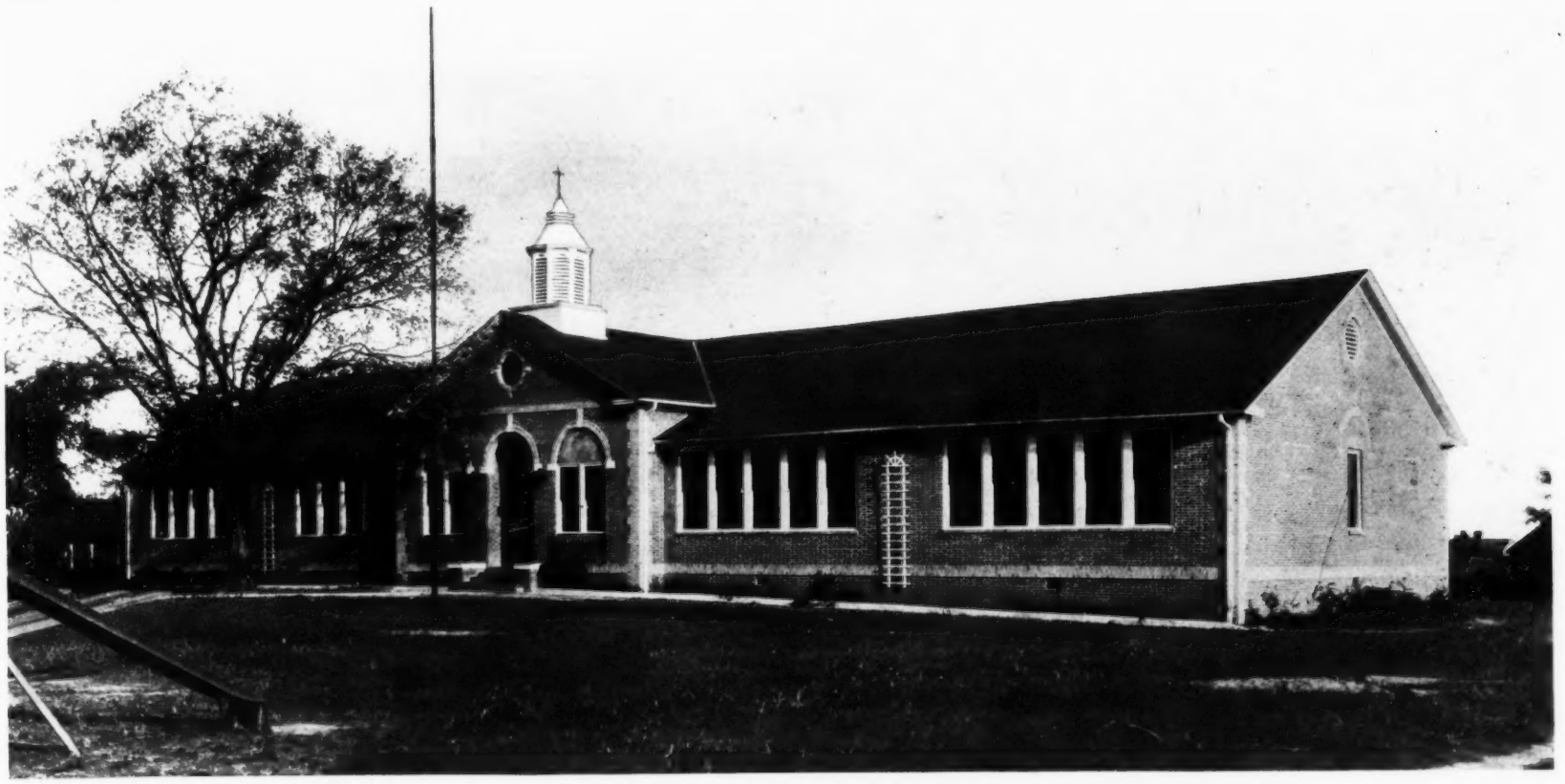
submitted in the competition for a common-brick school.

Fifty-two schools were submitted. About one half of those buildings submitted did not, in our judgment, rise to the standard in schoolhouse design, which the competition would seem to merit. This portion of the entries could hardly be called representative of the best work done by the architects of the country, and it is evident that many architects responsible for the best in schoolhouse design did not participate.

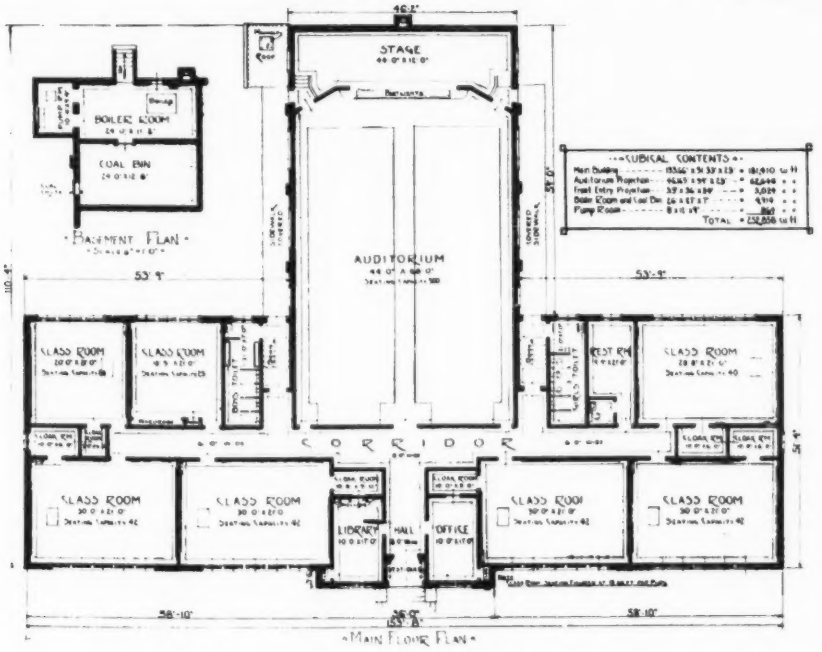
Many of the designs, however, evidence a clear understanding and a serious study of the problem, and showed that restraint which is always the charm of good architecture and design. Common brick is admirably adapted to school design. Bricks of this character are locally and readily obtainable in almost every part of the United States, and they give an opportunity for that rare quality which marks the success of many of our best modern schools. Common brick also gives an opportunity for economy in the expression of good architecture in the hands of skilled designers, while at the same time it produces a building of good structural quality.

Solid brick masonry cannot be surpassed. Schools deserve sound and solid construction, and no material is better adapted to permanency, fire safety, and good economical construction than common brick. Its use is familiar to all builders in all localities. It is a safe material, and brickwork requires the minimum of supervision under construction. Brickwork is maintained at a minimum expense, and this is important when it is realized that school buildings are subjected to abuse and sometimes are neglected in the matter of upkeep.

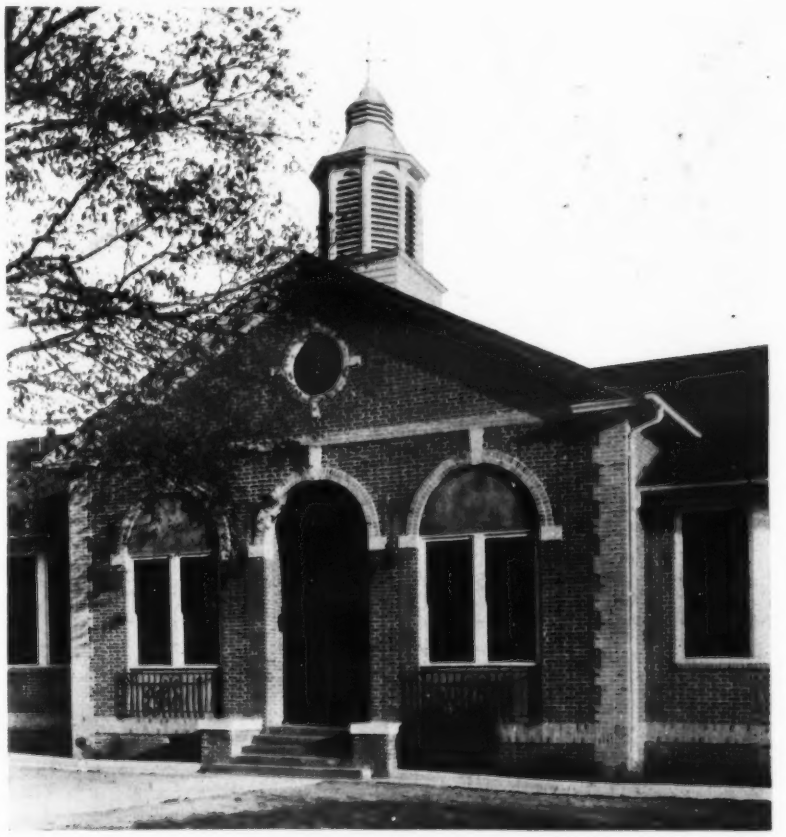
After careful consideration of all the schools submitted in the competition, we have selected for the grand prize the design entered by Henry Y. Shaub, of Lancaster, Pa., being the Junior High School of Upper Leacock township, Leola, Lancaster county, Pa. This building is representative of the school for the smaller communities which, after all, is the problem in schoolhouse planning that has been least developed. This school may safely be taken as a model building for the small community. This plan is simple, giving maximum diversified school and community uses which is so necessary when funds are limited. This entry possesses a charm that is rarely accomplished in buildings of this kind. This same building was awarded the first prize in Class A of the competition for the smaller buildings.



HALIFAX PUBLIC SCHOOL, HALIFAX COUNTY, N. CAR.
Eric C. Flannagan, Architect, Henderson, N. Car.
(First Mention, Class A—Common-Brick School Competition, 1928.)



HALIFAX PUBLIC SCHOOL, HALIFAX COUNTY, N. CAR.
Eric C. Flannagan, Architect, Henderson, N. Car.



HALIFAX PUBLIC SCHOOL, HALIFAX COUNTY, N. CAR.
Eric C. Flannagan, Architect, Henderson, N. Car.

The plan awarded the first prize in Class B, representing the larger buildings, is that of Davis, Dunlap & Barney, Philadelphia, being the Cheltenham High School, Elkins Park, Pa.

This building was selected for the reason that it typifies the correct use of the architectural precedent when applied to modern buildings. The architects have successfully fitted their building to site conditions.

The designs selected for recognition were placed in the following order:

CLASS A

First Prize—Henry Y. Shaub, 20½ North Queen St., Lancaster, Pa. Upper Leacock Township Junior High School (Public)—Leola, Upper Leacock Twp., Lancaster, Pa.

Second Prize—G. Howard Chamberlin, 18 South Broadway, Yonkers, N. Y. Public School. No. 11, Woodlawn Ave., Yonkers, N. Y.

Third Prize—Victor Galbraith, 208 Elks Building, Stockton, California. Harmony Grove School (Public), San Joaquin County, Calif.

First Mention—Eric G. Flannagan, Henderson, N. C. Halifax Public School, Halifax County, N. C.

Second Mention—Victory Galbraith, 208 Elks Building, Stockton, California, The Davis School, San Joaquin County, Calif.

Third Mention—Frederick S. Stott, 707 World-Herald Bldg., Omaha, Nebraska. Oakdale School, Douglas County, Nebr.

Fourth Mention—Coffin & Coffin, 522 Fifth Avenue, New York, N. Y. Glenwood Landing School (Public), Glenwood Landing, N. Y.

Extra Mention—Charles C. Loring, 7 Water Street, Boston, Mass. Stoughton High School (Public), Stoughton, Mass.

CLASS B

First Prize—Davis, Dunlap & Barney, 1805 Walnut St., Philadelphia, Pa. Cheltenham High School, Elkins Park, Pa.

Second Prize—Dean & Dean, California State Life Bldg., Sacramento, California. Leland Stanford Elementary School, Sacramento, California.

Third Prize—Palmer Rogers, 101 Park Avenue, New York, N. Y. Northside High School, Corning, N. Y.

First Mention—Wesley S. Bessell, 58 West 49th Street, New York, N. Y. Flower Hill School, Port Washington, Long Island, N. Y.

Second Mention—Coffin & Coffin, 522 Fifth Avenue, New York, N. Y. Locust Valley School, Locust Valley, N. Y.

Third Mention—Eliel Saarinen, Cranbrook Architectural Office, Bloomfield Heights, Mich. The Cranbrook School, Bloomfield Hills, Mich.

Fourth Mention—Dean & Dean, California State Life Bldg., Sacramento, California. Sacramento Junior College (Public), Sacramento, California.

Extra Mention—Blaine & Olson, 1755 Broadway, Oakland, California. The W. P. Frick School (Public), Oakland, California.

Very truly yours,

Wm. B. Ittner, Jr.
J. O. Betelle.
W. R. McCornack.

Grand Prize—Class A

Architect. Mr. Henry Y. Shaub, Lancaster, Pa.

School and Location. Upper Leacock Township Junior High School, Leola, Upper Leacock Township, Lancaster county, Pa.

The Building. This building was designed as a junior high school for a rural district. The plot of ground contains, in addition to the building, a one-fifth mile cinder running track, football and baseball fields, courts for volley ball, handball, and tennis.

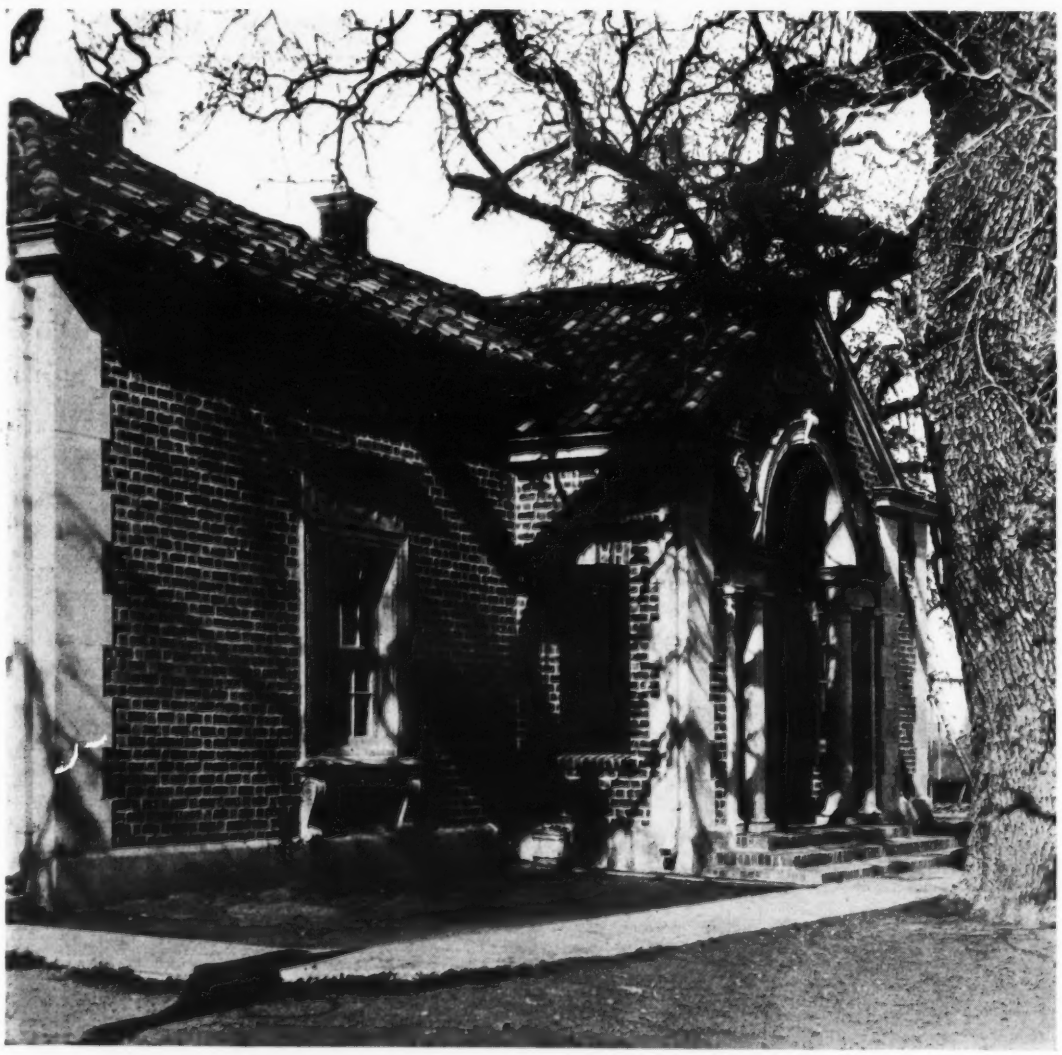
The building is used as a community center and is planned so that the health-education and assembly rooms and the library can be used without opening the entire building. The stage, classrooms, and recitation rooms are lighted by skylights.

Construction. The exterior walls are faced with Lancaster quaker colonial brick. The face brick is laid up in Flemish bond, using cement mortar with flush pencilled joints. The exterior walls are backed up with 8-in. hollow cinder-cement blocking, with the face brick tied into the same by allowing the headers of every seventh course to extend into the back-up material.

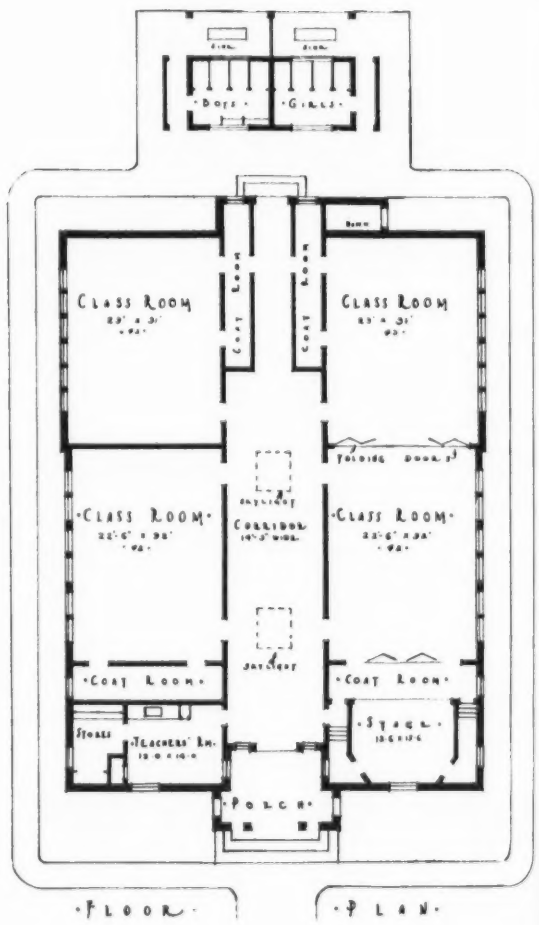
The Cost. The building complete ready for equipment, cost $110,000.



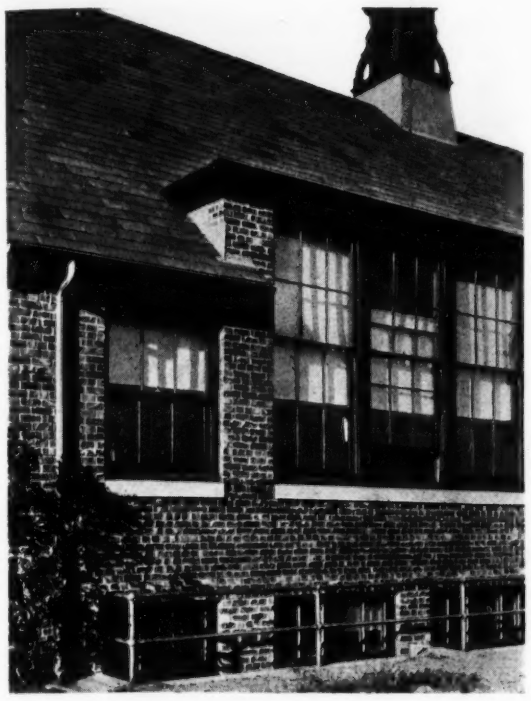
THE DAVIS SCHOOL, SAN JOAQUIN COUNTY, CALIF.
Victor Galbraith, Architect, Stockton, Calif.
(Second Mention, Class A—Common-Brick School Competition, 1928.)



THE DAVIS SCHOOL, SAN JOAQUIN COUNTY, CALIF.
Victor Galbraith, Architect, Stockton, Calif.
(Second Mention, Class A—Common-Brick School Competition, 1928.)



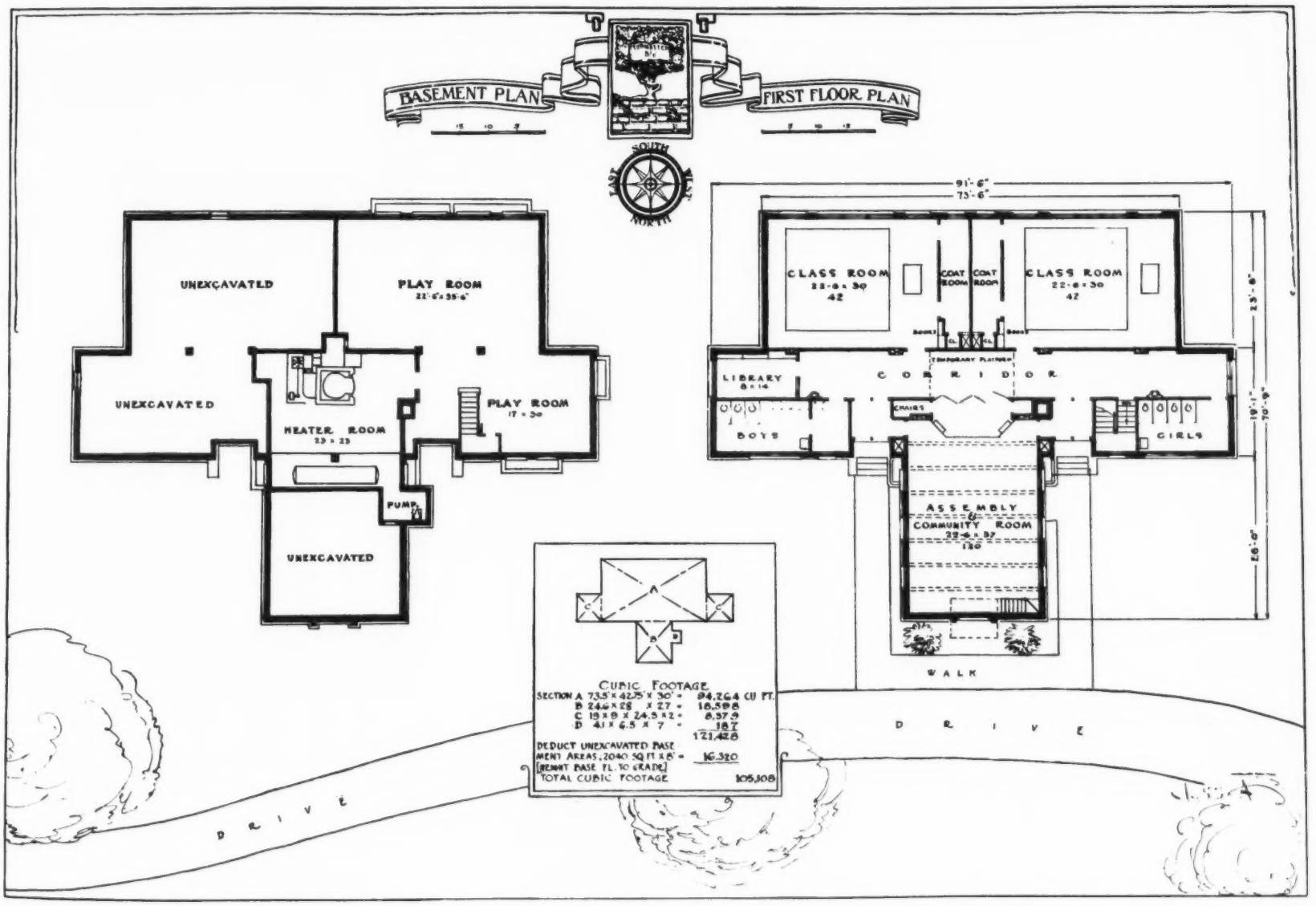
THE DAVIS SCHOOL, SAN JOAQUIN COUNTY, CALIF.
Victor Galbraith, Architect, Stockton, Calif.



OAKDALE SCHOOL, DOUGLAS COUNTY, NEBR.
Frederick S. Stott, Architect, Omaha, Nebr.



OAKDALE SCHOOL, DOUGLAS COUNTY, NEBR.
Frederick S. Stott, Architect, Omaha, Nebr.
(Third Mention, Class A—Common Brick School Competition, 1928.)



OAKDALE SCHOOL, DOUGLAS COUNTY, NEBR.
Frederick S. Stott, Architect, Omaha, Nebr.

Second Prize—Class A

Architect. Mr. G. Howard Chamberlain, 18 South Broadway, Yonkers, N. Y.

School and Location. Public School No. 11, Woodlawn Ave., Yonkers, N. Y.

The Building. The building, which was completed in March, 1927, houses an elementary school of twelve rooms and has been planned so that an addition of twelve more rooms may be added at a future date when the need arises.

Construction. The exterior walls are faced with old colonial brick, with Massillon bar-floor construction and ceiling slab, and all walls are backed with Hudson River common brick. The superimposed wooden roof is covered with slate. A feature of the construction is the arrangement of the boiler flue, which is carried up through the central tower, from which it discharges through the apex, which eliminates the unsightly appearance of a detached flue. The floors, with the exception of the gymnasium and auditorium, are laid in mastic and concrete. The toilets are finished in tile.

Third Prize—Class A

Architect. Mr. Victor Galbraith, 208 Elks Building, Stockton, Calif.

School and Location. Harmony Grove Grammar School, about 14 miles northeast of Stockton, in San Joaquin county, Calif.

The Building. The exterior walls are of common-brick veneer over a wood frame. The face brick is laid up in Flemish bond, using a light cream-colored mortar. The quoins and trimming around the entrance are of Portland cement plaster just off the white. The half-timber is of white cedar, which has been hand adzed and antiqued. The roof is of clay tile in harmonious shades of tan, orange, brown, and black. All classrooms have maple floors and slate blackboards; corridor floors are of maple. The classrooms are heated with individual "Vecto" heaters in each room.

The Cost. The building was erected at a cost of 16½ cents per cubic foot.

First Honorable Mention—Class A

Architect. Mr. Eric G. Flannagan, Henderson, N. C.

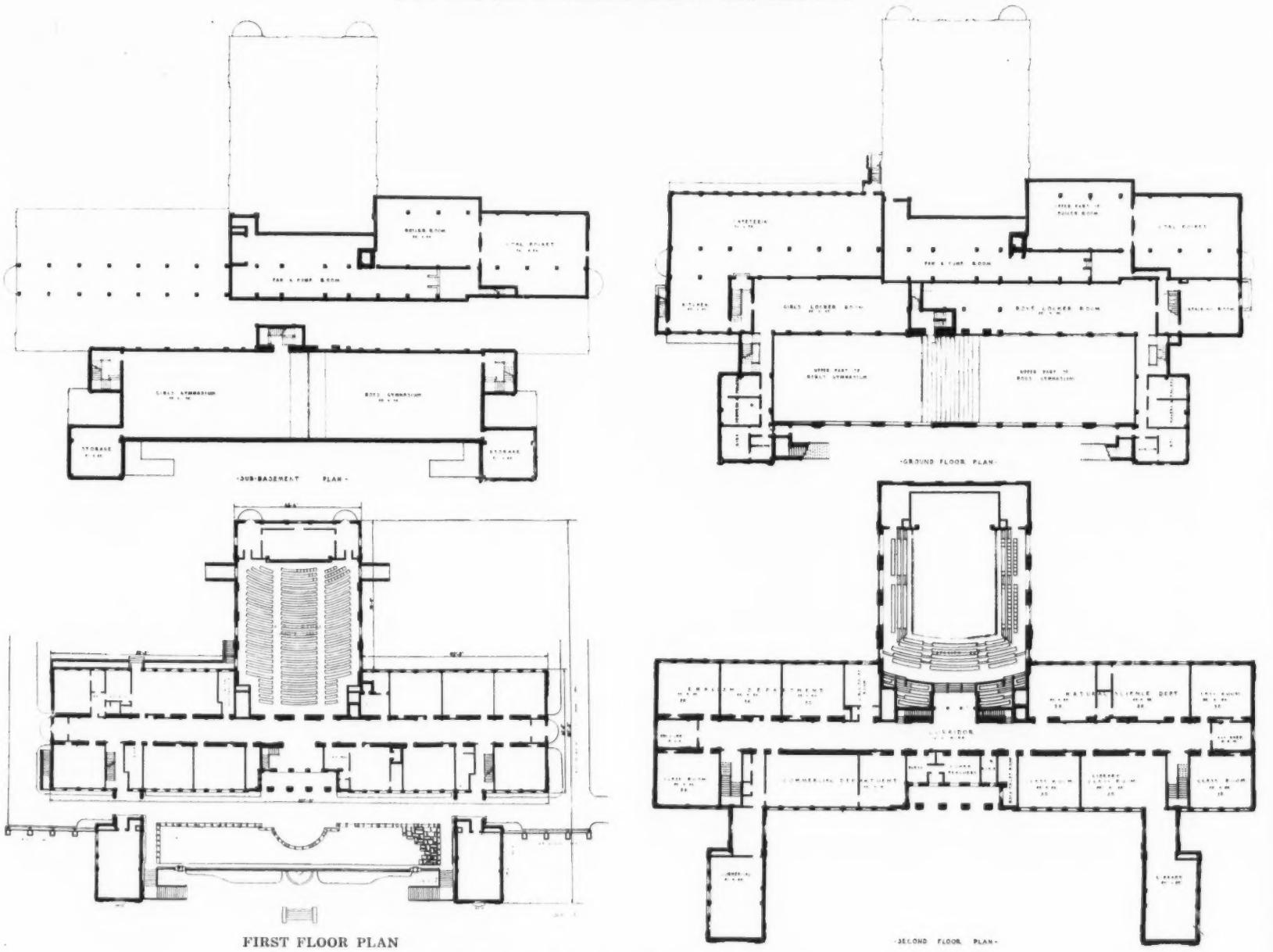
School and Location. Halifax Primary and Grammar School, town of Halifax, in Halifax county, N. C.

Construction. The exterior walls contain more than 75 per cent of common brick, manufactured by the Cherokee Brick Company of Raleigh, backed up above the grade with cinder block.

The Building. The building was completed in the spring of 1928 and contains an auditorium, a rest-room, an office, and a library, in addition to seven classrooms. There are also boys' and girls' toilets and adequate cloakroom space.

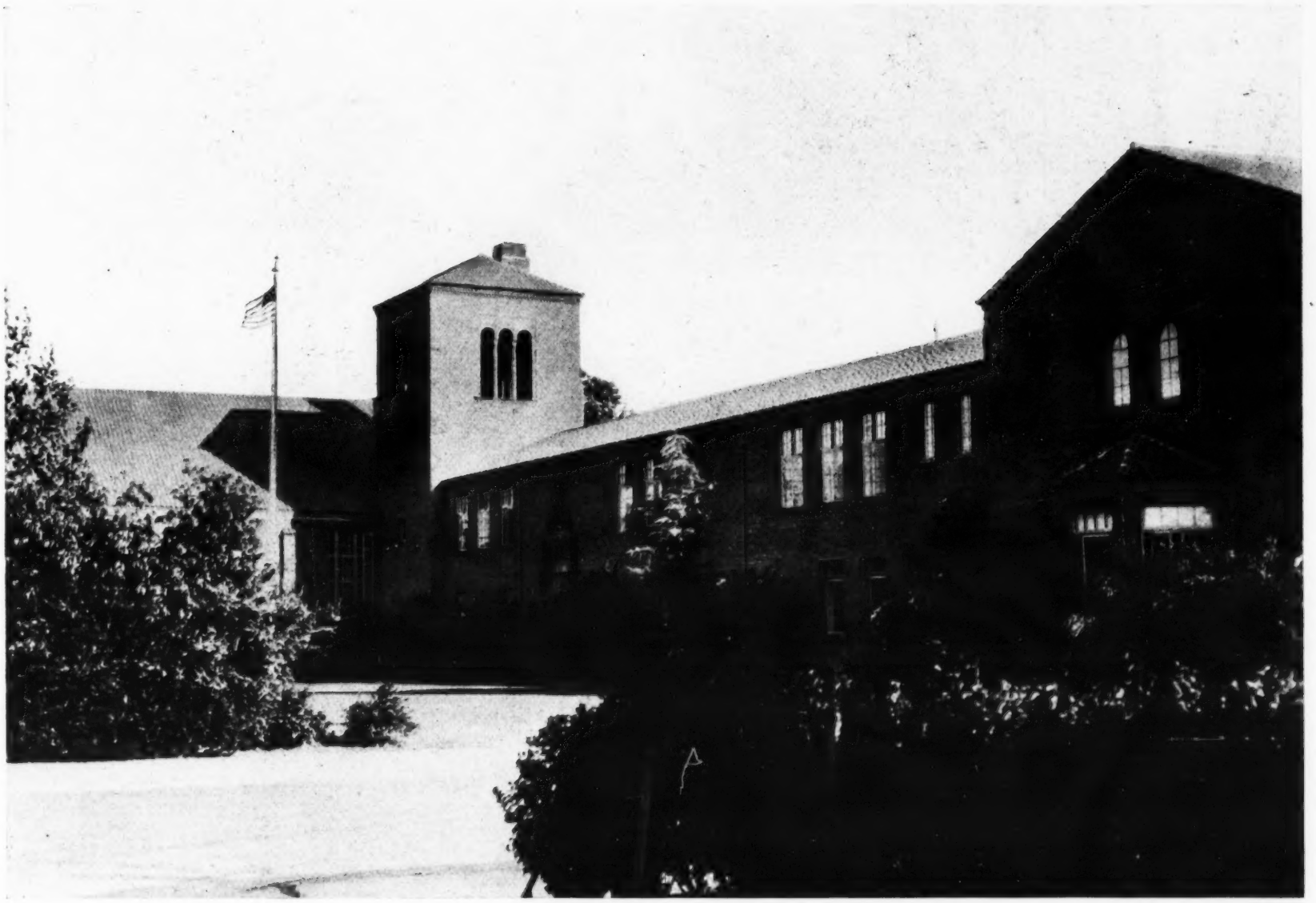


CHELTENHAM HIGH SCHOOL, ELKINS PARK, PA.
Davis, Dunlap and Barney, Architects, Philadelphia, Pa.
(First Prize, Class B—Common-Brick School Competition, 1928.)

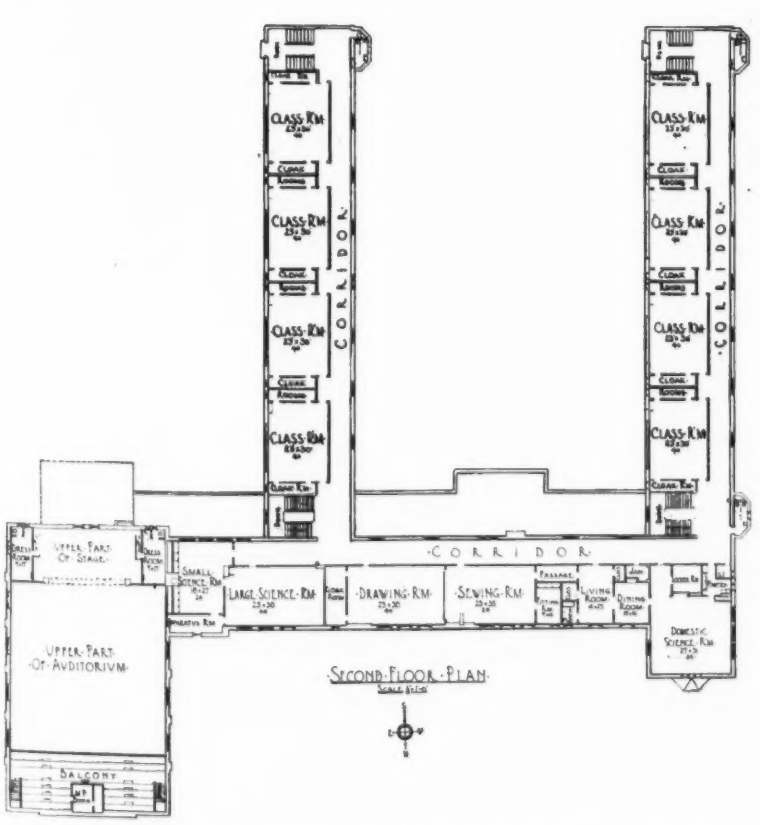


FIRST FLOOR PLAN

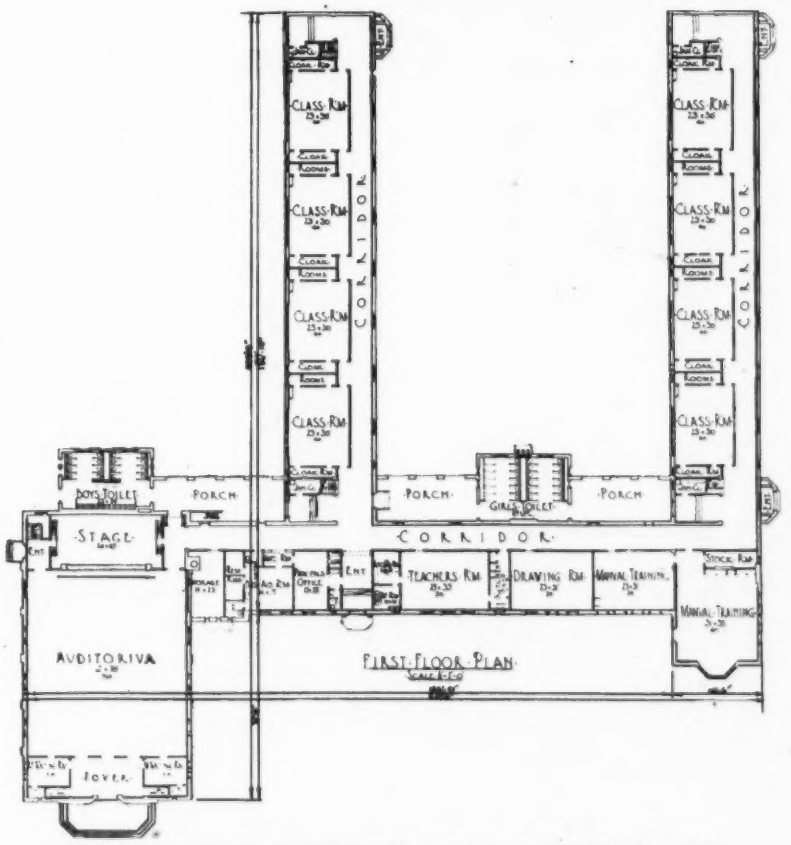
Davis, Dunlap and Barney, Architects, Philadelphia, Pa.
(First Prize, Class B—Common-Brick School Competition, 1928.)



LELAND STANFORD ELEMENTARY SCHOOL, SACRAMENTO, CALIF.
Dean and Dean, Architects, Sacramento, Calif.
(Second Prize, Class B—Common Brick School Competition, 1928.)



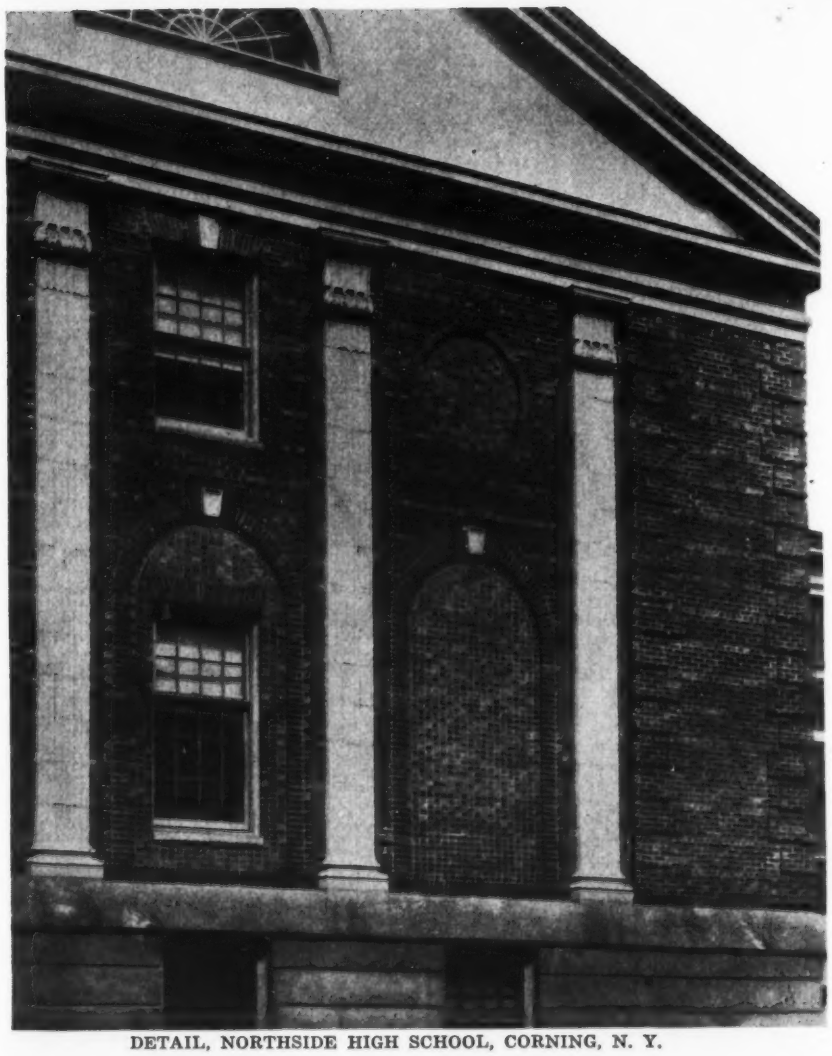
LELAND STANFORD ELEMENTARY SCHOOL, SACRAMENTO, CALIF.
Dean and Dean, Architects, Sacramento, Calif.



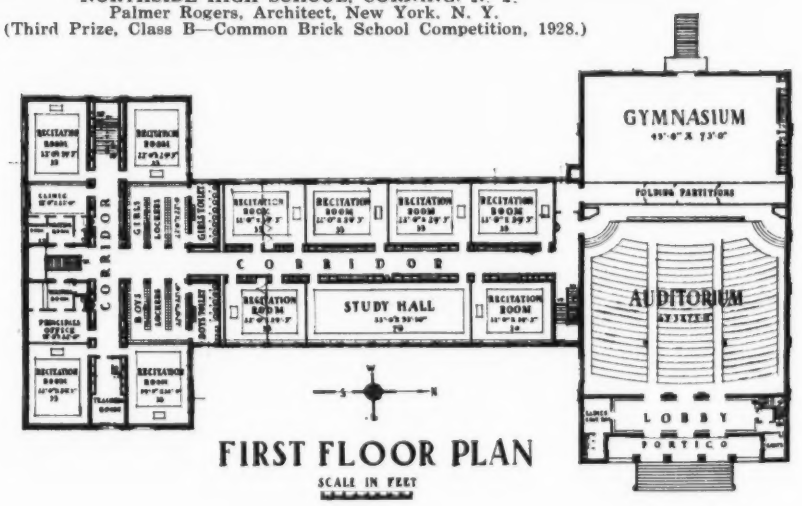
LELAND STANFORD ELEMENTARY SCHOOL, SACRAMENTO, CALIF.
Dean and Dean, Architects, Sacramento, Calif.



NORTHSIDE HIGH SCHOOL, CORNING, N. Y.
Palmer Rogers, Architect, New York, N. Y.
(Third Prize, Class B—Common Brick School Competition, 1928.)



DETAIL, NORTHSIDE HIGH SCHOOL, CORNING, N. Y.





NORTHSIDE HIGH SCHOOL, CORNING, N. Y.
Palmer Rogers, Architect, New York, N. Y.



FLOWER HILL SCHOOL, PORT WASHINGTON, LONG ISLAND, N. Y.
Wesley S. Bessell, Architect, New York, N. Y.
(First Mention, Class B—Comomn-Brick School Competition, 1928.)



FLOWER HILL SCHOOL, PORT WASHINGTON, LONG ISLAND, N. Y.
Wesley S. Bessell, Architect, New York, N. Y.
(First Mention, Class B—Common-Brick School Competition, 1928.)

Second Honorable Mention—Class A

Architect. Mr. Victor Galbraith, 208 Elks Building, Stockton, Calif.

School and Location. Davis Grammar School, six miles from Stockton, in San Joaquin county, Calif.

The Building. The exterior walls are of varying shades of common red and black brick over a wood frame. The face brick is laid up in Flemish bond, using a light cream-colored mortar with ¾-in. roughcut joints. All classrooms have maple floors and plate blackboards. Heat is supplied by means of "Heatrola" heaters in each classroom.

The Cost. The building was erected at a cost of 17 cents per cubic foot.

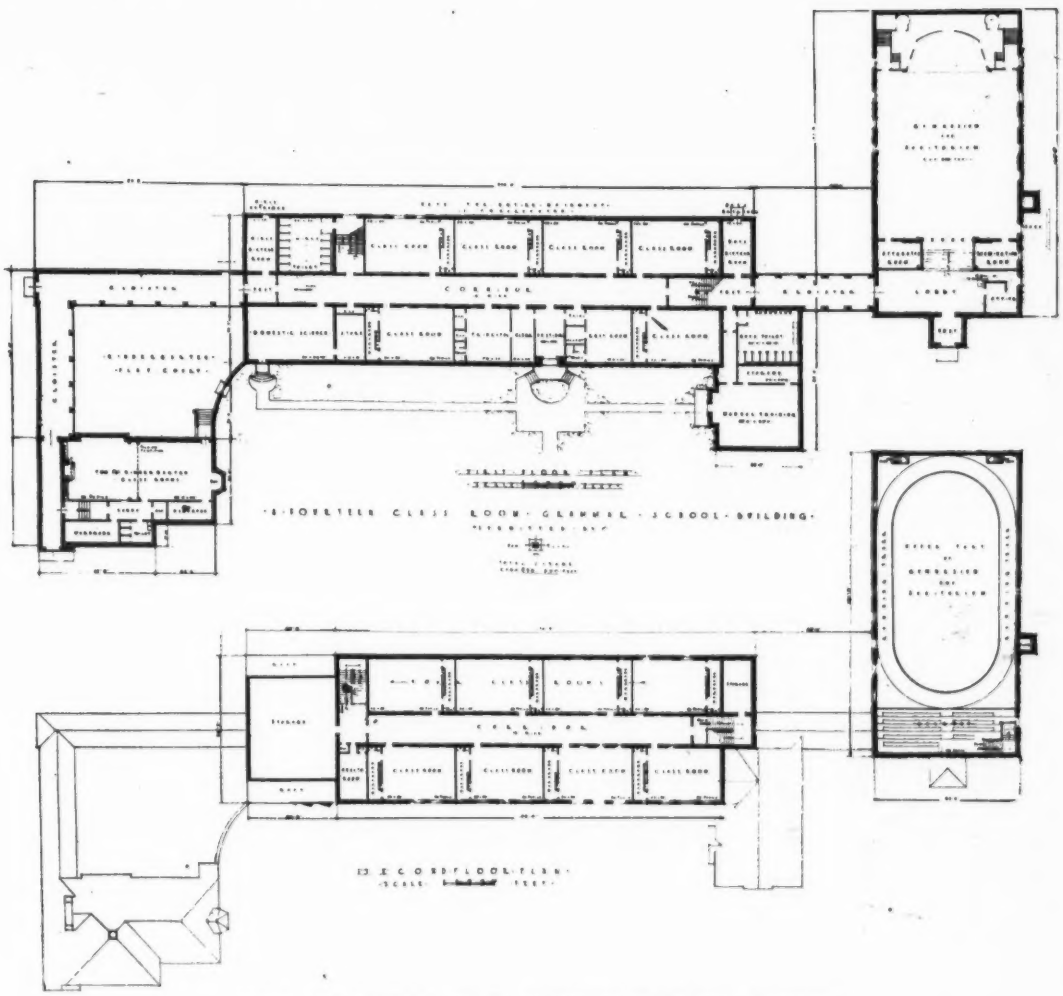
Third Honorable Mention—Class A

Architect. Mr. Frederick S. Stott, 707 World-Herald Building, Omaha, Nebr.

School and Location. Oakdale School, located on Center Street Road, eight miles from Omaha, in School Dist. No. 31, Douglas county, Neb.

The Building. The exterior walls are of cinder-concrete blocks faced with Omaha common brick, composed partly of vitrified common brick and some lighter shades of hard-burned brick. The face brick and backing are bonded together with a full brick-header course every sixth course of brick, using cement mortar with ½-in. raked joints.

The floors and interior partitions are of wood construction, covered with plaster on metal lath, the trim is oak, and the roof is of slate. The building is heated with a brick-set furnace, and heat is supplied by an automatic oil burner. A fan and duct system carries the warmed air to the classrooms. The building has an automatic deep-well-water pumping plant and a sewage disposal system.



FIRST AND SECOND FLOOR PLANS, FLOWER HILL SCHOOL, PORT WASHINGTON, LONG ISLAND, N. Y.
Wesley S. Bessell, Architect, New York, N. Y.

The Cost. The cost of the building complete, without furniture or architect's fees, was 20 cents per cubic foot.

Fourth Honorable Mention—Class A

Architect. Messrs. Coffin & Coffin, 522 Fifth Ave., New York, N. Y.

School and Location. Glenwood Landing Grade School, Glenwood Landing, N. Y.

The Building. The building was designed to afford complete school facilities and to provide for community activities. The auditorium and gymnasium are arranged so that they may be used by the public without entering the classroom section. The design is Georgian.

Construction. The exterior walls are of Washington colonial brick.

Fifth Honorable Mention—Class A

Architect. Mr. Charles G. Loring, 7 Water St., Boston, Mass.

School and Location. Stoughton High School, Stoughton, Mass.

Construction. The exterior walls are of red water-struck brick, with brick pilasters and frieze in special brick designs. The face brick is laid up in a white mortar joint. The trimming is of white limestone. The main floor of the building is of concrete construction and the stairs and staircase halls are entirely fireproof. The heating is supplied by a plenum-fan system, supplemented by direct radiation.

The Building. The building was completed in 1923. In addition to eight classrooms, the building contains an auditorium-gymnasium, a principal's suite, manual-training and domestic-science rooms, a lunchroom, a medical inspector's room, a library, commercial rooms, laboratories, together with toilets, showers, and locker rooms. A book lift from the supply room serves all floors.

First Prize—Class B

Architect. Messrs. Davis, Dunlap, & Barney, 1803 Walnut St., Philadelphia, Pa.

School and Location. Cheltenham High School, located on the High School Road, at Elkins Park, Pa.

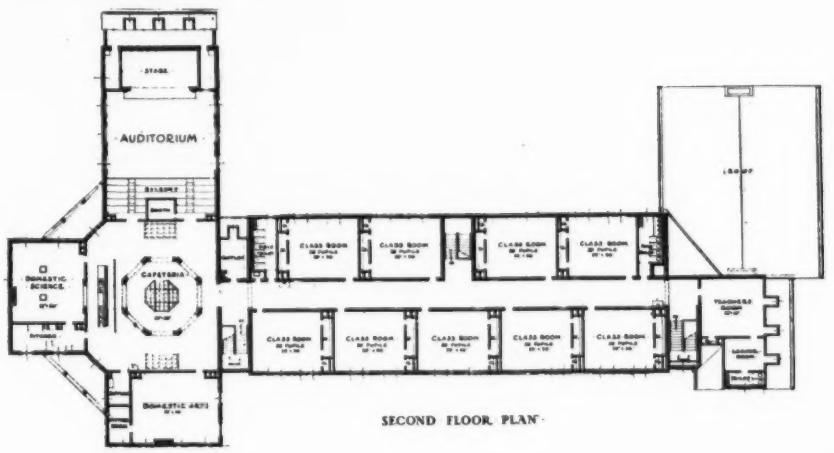
The Building. The building is a senior high school and was erected in 1924-25 as the first unit in the development of a plan which is to include a shop building, a junior high school, and a home-economics building. It occupies a site on a plateau overlooking the athletic field with running track and stadium.

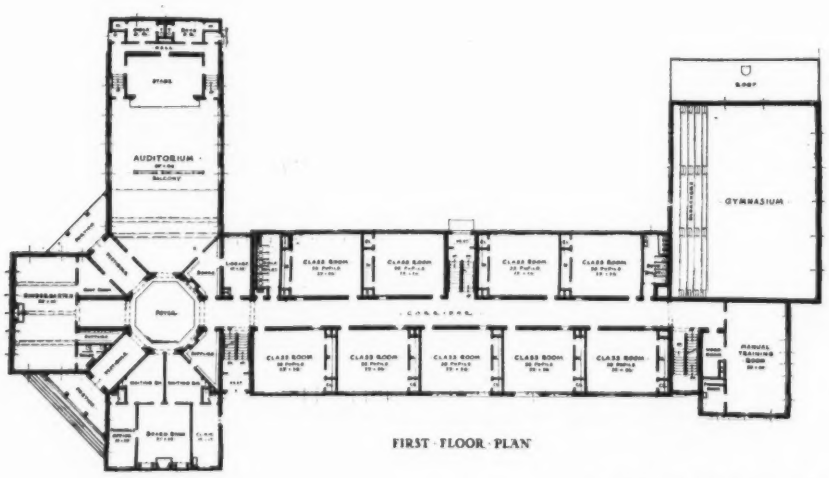
Construction. The building is built of reinforced concrete. The walls above the first floor are nonbearing,

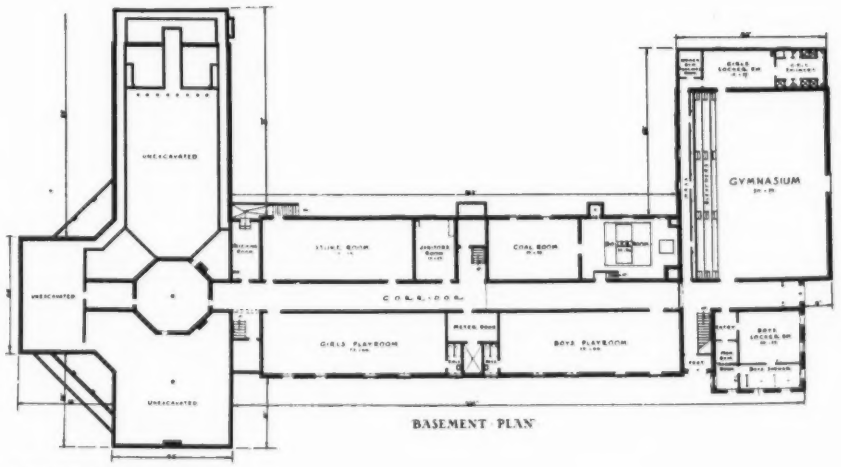


LOCUST VALLEY SCHOOL, LOCUST VALLEY, N. Y.
Coffin and Coffin, Architects, New York, N. Y.
(Second Mention, Class B—Common-Brick School Competition, 1928.)

Gymnasium	55-6x72-0x37-0	144,882
Girls' Showers	15-0x55-6x16-0	13,328
Boys' Lockers	34-0x41-0x32-0	44,608
Connection	10-0x34-0x34-0	11,560
Main Building	155-0x61-0x36-0	340,380
Basement	78-0x36-0x13-0	36,504
Basement	78-0x36-0x99-0	25,272
Boiler—Coal Room	72-0x23-6x19-0	32,148
Janitor	95-0x23-6x19-0	22,330
Connection	10-0x34-0x34-0	11,560
Board Room	43-6x26-0x38-0	42,978
Kindergarten	43-6x26-0x38-0	42,978
Auditorium	43-6x66-0x40-0	114,840
Dressing Room	12-6x42-0x20-0	10,500
Center	53-0x61-0x42-0	135,786
Tower	22-0x22-0x20-0	9,680
Tower	9-0x 9-0x12-0	972
TOTAL CUBIC FEET		1,040,306







LOCUST VALLEY SCHOOL, LOCUST VALLEY, N. Y.
Coffin and Coffin, Architects, New York, N. Y.

being carried from floor to floor. The exterior walls are of common-brick veneer with a terra-cotta backing. The brick is laid up with Hytest cement, in uniform joints, struck flush and tooled to the size of a heavy spike. A stretcher bond is used, with every sixth course a true Flemish bond, and every third course a false Flemish bond. Half bricks were used to form the headers. The exterior trim is of light-tooled limestone, with dressed bluestone used in small quantities for the bases of the front columns, the door sills, and the belt course of the porch.

Second Prize—Class B

Architect. Messrs. Dean & Dean, California State Life Building, Sacramento, Calif.

School and Location. Leland Stanford Elementary School, Sacramento, Calif.

The Building. This building was completed in 1922. It is of reinforced-concrete frame construction with exterior 12-in. common-brick curtain walls between columns and girders, and 4-in veneer over columns and girders. The roof is of frame, covered with tile. All exterior walls are of common brick, composed partly of ordinary commons and partly of the darker-burned or smooth-clinker commons, laid at random in a Flemish bond.

Third Prize—Class B

Architect. Mr. Palmer Rogers, 101 Park Ave., New York, N. Y.

School and Location. North Side High School, Corning, N. Y.

Construction. This building is intended for a junior-senior high school. The architectural design of the building follows the precedent of the early colonial buildings in the vicinity.

Construction. The building is constructed of load-bearing, hollow tile, faced with over burned common brick. The face brick is laid in cement mortar with ½-in. struck joints, and the face brick is tied into the hollow tile every sixth course by means of a through-header course. Solid brick-wall construction is used wherever concentrated loads occur in the building.

First Honorable Mention—Class B

Architect. Mr. Wesley S. Bessell, 58 West 49th St., New York, N. Y.

School and Location. Public School No. 5, (Flower Hill School), Middle Neck Road, Port Washington, L. I., N. Y.

The Building. This building has been planned as one unit in the development of a group of buildings forming a complete quadrangle. It has been erected in such a way that additions may be built with direct connections through covered passageways.

In planning the building as part of a contemplated group, it has been the purpose to carry out the spirit of a small college, with separate buildings for the kindergarten, the gymnasium, and the main classroom building. The individual kindergarten building, with

its inclosed cloister and playground for the small children, carries out this idea. It has two large rooms separated by folding doors, and a fireplace is located at one end. The manual-training wing projects beyond the main classroom section.

Construction. The exterior walls are constructed of common Long Island brick, the color and texture of the brick having been especially selected for the purpose. The brick walls are faced on terra-cotta backing, with a 1-in. curtain wall of waterproof cement between. The walls are laid with four courses running stretcher, and the courses alternating stretcher and header. The mortar has a slightly yellow coloring, shading toward a warm gray-yellow, and the joints are slightly raked, giving a rough texture to the mortar joints.

Second Honorable Mention—Class B

Architect. Messrs. Coffin & Coffin, 522 Fifth Ave., New York, N. Y.

School and Location. Locust Valley Grade School, Locust Valley, N. Y.

The Building. This building is intended for a grade school and is well supplied with auxiliary rooms, in addition to classrooms. The building has been designed to meet the peculiarities of the site, and the location of the tower and main entrance carry out this idea. A slight variation in the grade level of approximately 10 feet accounts for the varying levels in the gymnasium. The architectural design is southern colonial and the weather-vane lantern on the portico was inspired by Mt. Vernon.

Construction. The building is constructed of Homewood colonial brick obtained from a Baltimore brick company.

Third Honorable Mention—Class B

Architect. Mr. Eliel Saarinen, Lone Pine Road, Bloomfield Hills, Mich.

School and Location. Cranbrook Preparatory School, Lone Pine Road, Bloomfield Hills, Mich.

The Building. This group includes several other buildings, including dormitories, a dining hall, and a gymnasium. Common brick is used in the construction of the entire group.

Construction. The exterior walls are constructed of common brick, with troweled joints, and the backing is 4-in. hollow brick.

Fourth Honorable Mention—Class B

Architect. Messrs. Dean & Dean, California State Life Building, Sacramento, Calif.

School and Location. Sacramento Junior College, Sacramento, Calif.

The Building. These three buildings are the nucleus of a large group to be developed around the court to the rear, the large arch representing the entrance to the court.

Construction. The exterior walls are of common brick, composed partly of ordinary commons, and partly darker-burned or smooth-clinker commons, laid at random, in a Flemish bond. The interior walls on the first floor between the classrooms and corridors are of concrete, and the exterior walls are of solid brick, 17 inches thick on the first story and 13 inches on the second story. All stairs and corridor floors are of concrete; classroom floors are of frame, while the roofs are of frame, covered with tile.

The Cost. The building was erected in 1925-26, at a cost of approximately $350,000.

First Extra Mention—Class B

Architect. Messrs. Blain & Olson, 1755 Broadway, Oakland, Calif.

School and Location. Frick Junior High School, Foothill Boulevard, Oakland, Calif.

The Building. This building has been designed for a junior high school accommodating 1,200 pupils.

Construction. The building is of steel-frame construction, with brick curtain walls, and fireproof corridors and stairways. With the exception of the main entrance, where the trim is of terra cotta, the exterior construction is of common brick, with cornices and ornamental panels of common brick, and roof of tile construction. All the brickwork has been laid up in horizontal joints varying from 1 inch to 1½ inch, and raked out at least ¾ inch. With the exception of the ornamental panels, all vertical joints are flush. An effort was made to keep the horizontal joints out of line and the vertical lines slightly out of plumb, in order to avoid a machinelike appearance. All brickwork was given two coats of whitewash, consisting of lime, white cement, and glue mixed in salt water.

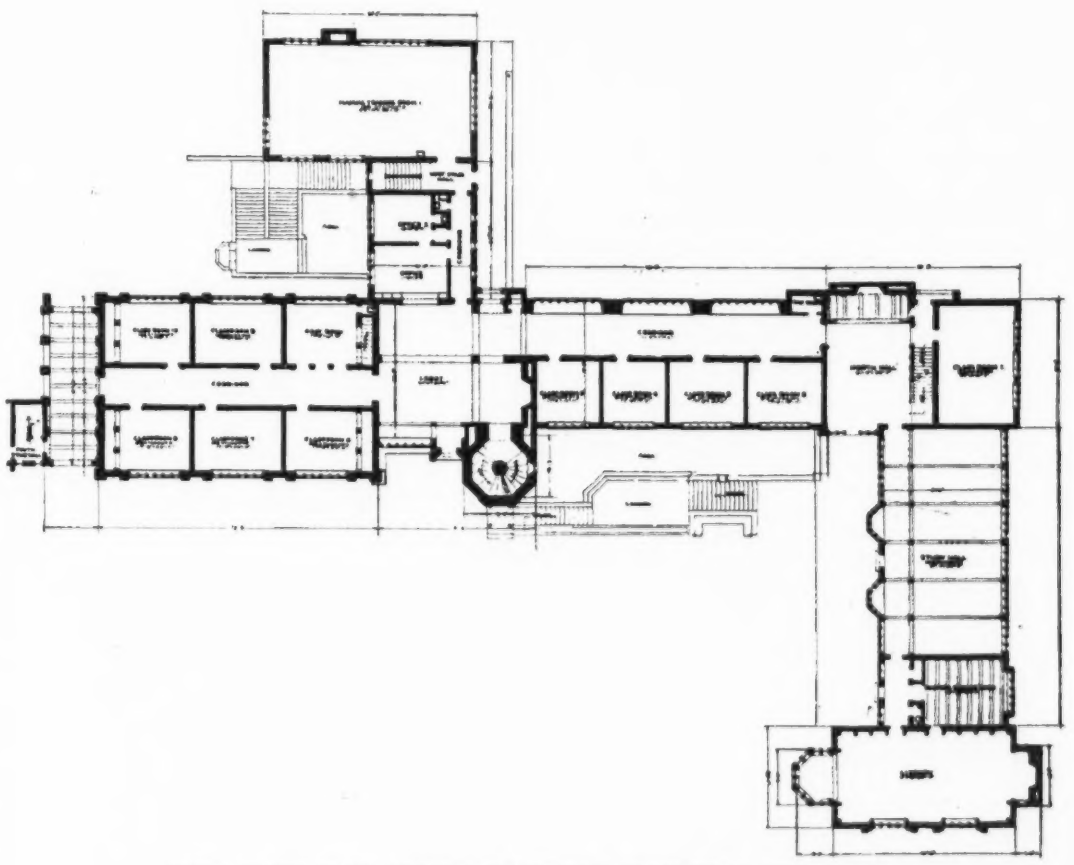
The Cost. The building was completed in 1927, at a cost of $440,000, excluding equipment.



DETAIL, LOCUST VALLEY SCHOOL, LOCUST VALLEY, N. Y.
Coffin and Coffin, Architects, New York, N. Y.
(Second Mention, Class B—Common-Brick School Competition, 1928.)



CRANBROOK SCHOOL, BLOOMFIELD HILLS, MICH.
Eliel Saarinen, Architect, Cranbrook Architectural Office, Bloomfield Hills, Mich.
(Third Mention, Class B—Common-Brick School Competition, 1928.)



FIRST FLOOR PLAN, CRANBROOK SCHOOL, BLOOMFIELD HILLS, MICH.
Eliel Saarinen, Architect, Cranbrook Architectural Office, Bloomfield Hills, Mich.
(Third Mention, Class B—Common-Brick School Competition, 1928.)

Second Extra Mention—Class B

Architect. Mr. Wesley S. Bessell, 58 West 49th St., New York, N. Y.

School and Location. Public School No. 2, (Kensington School, Nassau Drive, Kensington, Great Neck, L. I., N. Y.

The Building. This building has been planned to allow of future extensions, and will eventually form a quadrangle, with a kindergarten building as a separate unit, inclosing a playground on three sides.

Construction. The building is constructed of common Long Island brick, the color and texture having been especially selected by the architect. The walls are laid with four courses running stretcher, and the courses alternating stretcher and header. The exterior walls are of brick and terra-cotta backing, and a 1-in. curtain of waterproof cement between. The mortar has a slightly yellow coloring, shading to a warm gray-yellow, and the joints are raked slightly, giving a rough texture to the mortar joints.



EXTERIOR VIEW, PERKINS ELEMENTARY SCHOOL, KNOXVILLE, TENN.
William B. Ittner, Consulting Architect, St. Louis, Mo.
Barber and McMurray, Local Architects, Knoxville, Tenn.

Located on a four-acre site, this school was the **first** to be executed from the **typical elementary-school plan** developed for Knoxville. The school represents Knoxville's idea of an elementary school that will best serve the elementary-school needs of the city. Illustration shows the initial unit for 620 pupils. Eight additional classrooms will be added when needed, by extension of the wings. Cost of present unit, $115,713.80. Per pupil cost, $186.63.

The School-Building Program of Knoxville, Tennessee

H. P. Shepherd, Superintendent of Schools. William B. Ittner, F.A.I.A., St. Louis, Consulting Architect

In 1924 the board of education of Knoxville, Tenn., initiated a school-building survey. After a comprehensive and thorough study of this survey it found itself face to face with the following school-building problems:

1. A housing shortage of more than three thousand children—over seven thousand elementary-school children on half-day sessions, due to rapid increase in population, expansion of city limits and a long period of building inactivity.

2. Many old school buildings not providing adequate facilities for the development of a forward-looking educational program.

3. An administrative department housed in three rooms of the senior high school, which were wholly inadequate.

Board Adopts New Building Policy

The board of education, consisting of five members, L. H. Spilman, president, Belle Karnes Morris, Margaret Perkins Duggan, H. H. McCampbell, M.D., and W. L. Ambrose, together with the superintendent of schools, voted unanimously to adopt the following policies in evolving a solution to their many-sided school-building problem:

1. To develop a comprehensive school-building plan with consideration of estimated future growth and expansion.

2. To plan an immediate building program, in tune with this larger perspective, to be executed in the order of greatest needs.

3. To reorganize the schools from the 7-4 plan to 6-3-3 plan of organization.

4. To build larger and therefore fewer schools.

5. To rezone for a more efficient distribution of school centers.

6. To enlarge present sites where possible and to acquire others as far in advance as practical.

7. To provide kindergartens in all the elementary schools.

8. To include in each school center as far as possible adequate provisions for health and physical education, a library, and a cafeteria in addition to the required number of classrooms.

9. To demand the highest standards in safety, sanitation, heating, and lighting—briefly, fire-resistive construction and the "open plan."

10. To encourage the type of architecture that fits in best with the history and traditions of a southern city like Knoxville.

$2,250,000 for Immediate Needs

The initial step in the building plan was made possible by the $2,250,000 bond issue. The immediate program was divided into elementary schools (first six grades and kindergarten), junior high schools (grades seven, eight and nine) and senior high schools (grades ten, eleven and twelve), and provision for the housing of the administrative department.

The elementary-school program consisted of seven new schools, and the rehabilitation and expansion of eight old schools. The secondary-school program included two new one-thousand-pupil junior high schools, a detached gymnasium building for the senior high school, and a new Negro senior high school.

The New Elementary School

Knoxville's model elementary-school building is represented by the typical plan developed for the new Perkins school, one of the first projects of the immediate building program. It was planned as a 1,000-pupil school and will be executed in two installments. The plan may be expanded to a 1,500-pupil capacity.

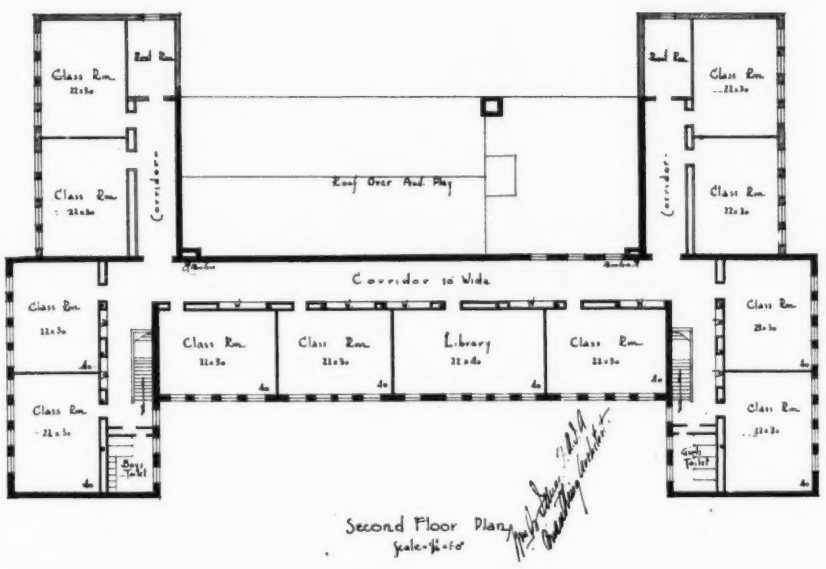
The initial unit for the Perkins school accommodated 640 pupils. The plan shows a combination auditorium-playroom (40 by 80 ft.) with stage, cafeteria, and kitchen grouped on the first floor. Although 18 classrooms are required for the 1,000-pupil capacity, only 9 were necessary for the first unit, with a kindergarten, a music room, a library, and a classroom-auditorium making up the additional units. The classroom-auditorium, which measures 22 by 33 ft., is provided with a small stage. It will serve as a classroom, a room for literature and dramatics, as well as for auditorium work for small groups.

The typical elementary-school plan executed for the Perkins school became the guide to all the new elementary schools, as well as additions to old buildings. All additions, as well as new buildings were planned to allow for expansion.

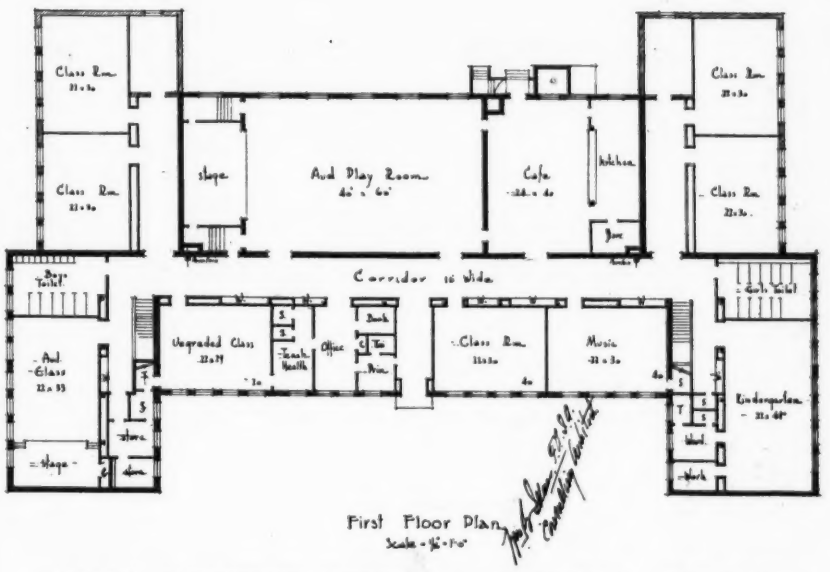
The cost of the first installment of the Perkins school was $115,713.80. As its working capacity is 640, the per-capita cost approximated $180.80. The low cost is due to several causes: First, cubic-foot building costs are comparatively low in Knoxville and vicinity, ranging from 24 cents to 28 cents; second, since Knoxville is a southern city, the cost of heating and ventilating apparatus is materially reduced.

The Program of Addition to Old Buildings

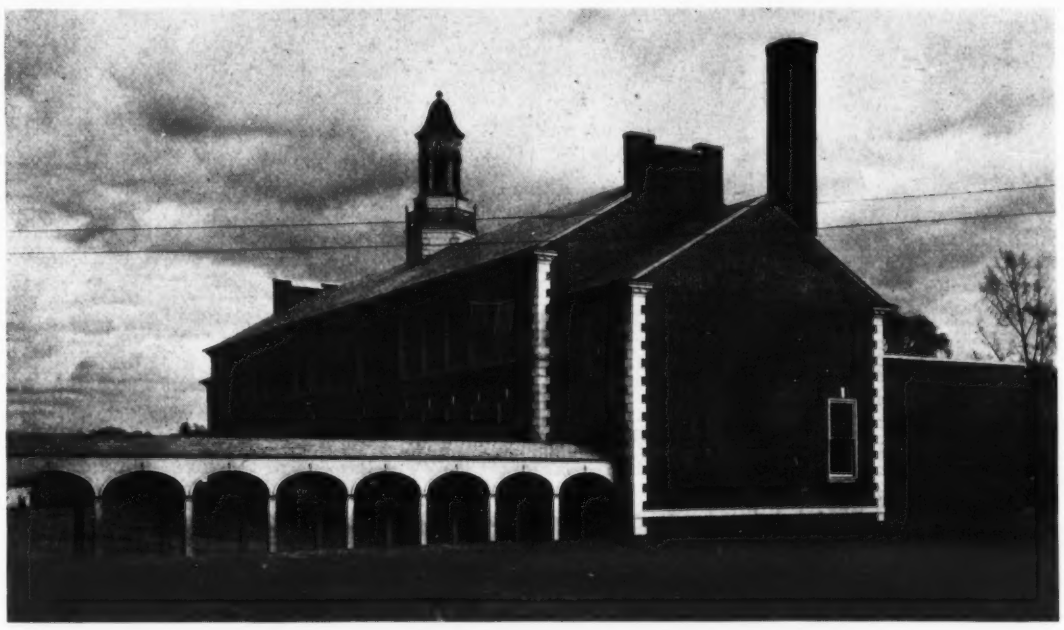
By far the most difficult part of the elementary-school program was that of dealing with the modernization and expansion of the existing buildings. Seven white schools and one Negro building were included in this program and each case presented all sorts of engineering and architectural problems. Six of the expansions took the form of additions attached to old buildings. The remaining two were detached annexes forming the nuclei of new buildings. The typical elementary-school plan for the new Perkins school served as the guide to the educational requirements of the annexes. In all cases the old buildings were put in shape for classroom work while the additions supplied the



PERKINS ELEMENTARY SCHOOL — KNOXVILLE, TENNESSEE
Scale -

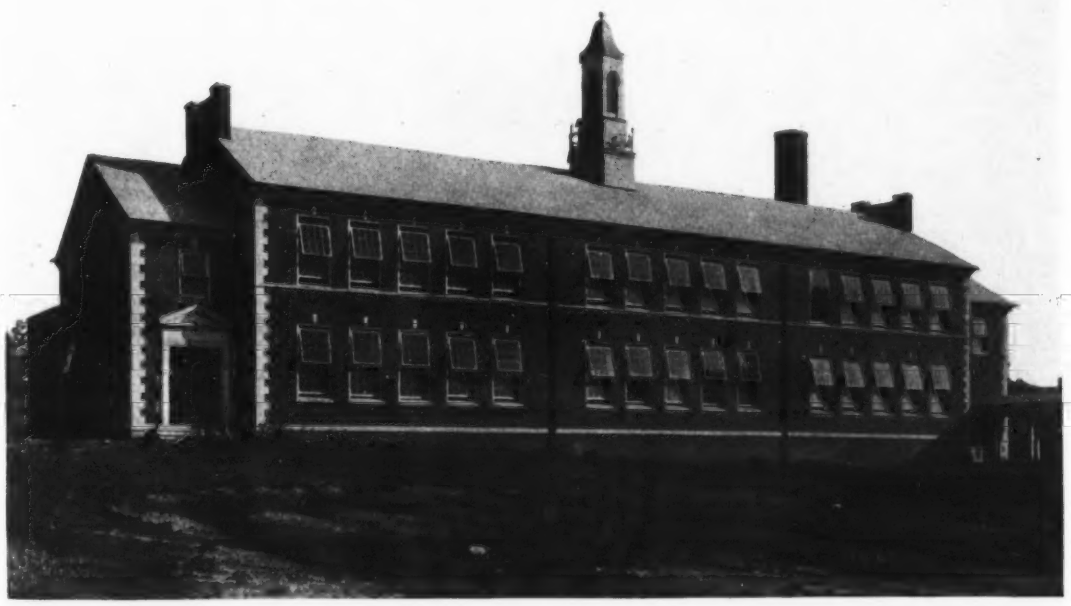


PERKINS ELEMENTARY SCHOOL — KNOXVILLE, TENNESSEE
Scale -



FAIR GARDEN ELEMENTARY SCHOOL, KNOXVILLE, TENN.
William B. Ittner, Consulting Architect, St. Louis, Mo.
Barber and McMurray, Local Architects, Knoxville, Tenn.

Illustration shows a detached addition to an old building and the arcade connecting the new part with the old. In addition to its role as a detached annex, the new part becomes the first unit of a new school which will gradually replace the old building. All additions to the Knoxville elementary schools were planned for expansion.



FAIR GARDEN ELEMENTARY SCHOOL, KNOXVILLE, TENN.
William B. Ittner, Consulting Architect, St. Louis, Mo.
Barber and McMurray, Local Architects, Knoxville, Tenn.

Another view of the detached annex which is in reality the central main unit of a new school like the Perkins. With the wing additions it will become practically a replica of the new typical elementary school.

special units required for the special studies with as many more classrooms as were needed for the educational program. In all cases also, new and larger heating plants in new quarters replaced the old ones. Basement space, thus vacated, was fitted up as cafeterias or workshops. A future building program will enlarge the additions into complete new buildings.

The Junior High Schools

The immediate Knoxville program called for two new junior high schools. The new Park junior-high-school plan represents the typical junior high school for Knoxville. It is planned for one thousand pupils and is located on an 18-acre tract. The plan shows two stories and is arranged around a central open court. A double gymnasium measuring 60 by 80 ft., with full shower and locker accessories closes in the court at the rear.

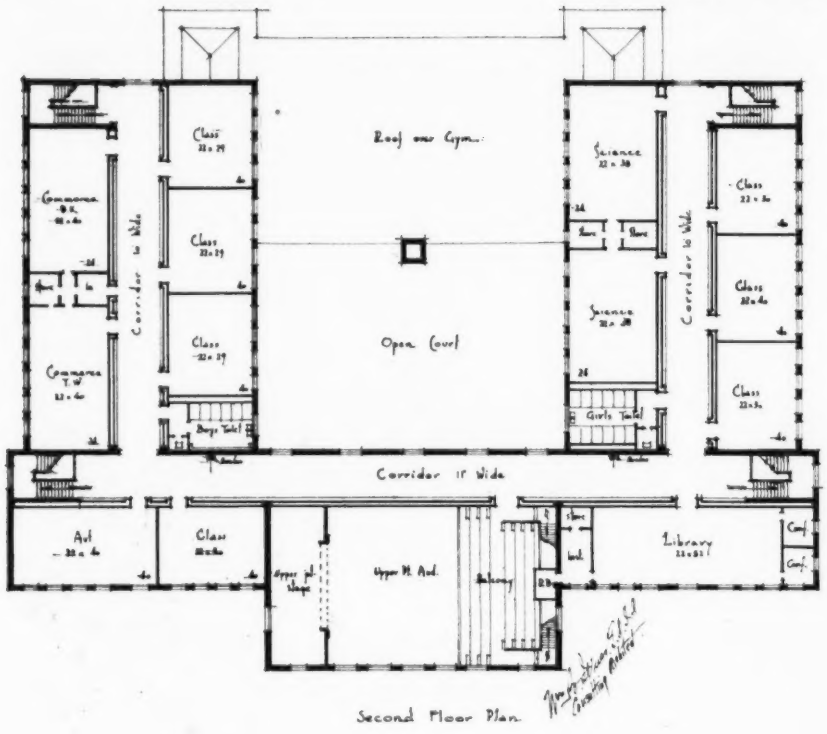
The auditorium, seating 500, equipped with stage, forms the central feature of the main front façade of the building. It has two outside entrances. Aside from the eleven classrooms, each 22 by 30 ft., the plan shows a music room with a capacity for 80, planned as a small auditorium, three home-economics units, two general-science laboratories, a commerce group of two rooms, an artroom, and a library sufficient for 70 pupils at a time. Six shop units, and a cafeteria (not indicated in the illustration) form the rear ends of the wings on the basement level. These were possible by taking advantage of the drop in grade. Recessed lockers are provided along the corridor walls.

The cost of the typical junior school as represented by the Park junior high school is $307,520, yielding a per-pupil cost of $307.52.

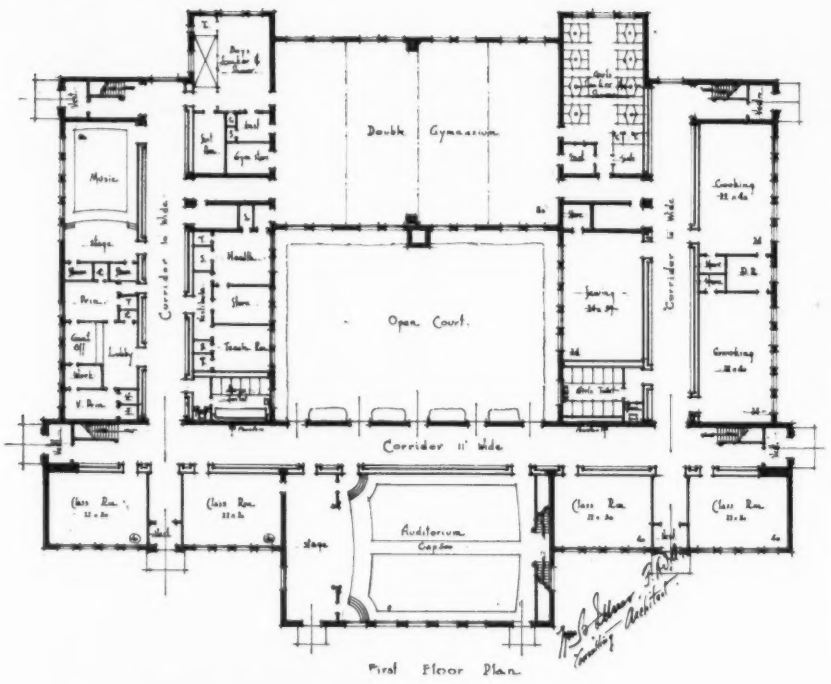
The new Rule Junior High School although including practically the same educational content and mechanical features as the Park, departed in many respects from the typical plan owing to the topography of the grounds. The gymnasium, auditorium, and library units are located similar to the Park school. Most of the other units show variation in location and grouping.

The Senior High School

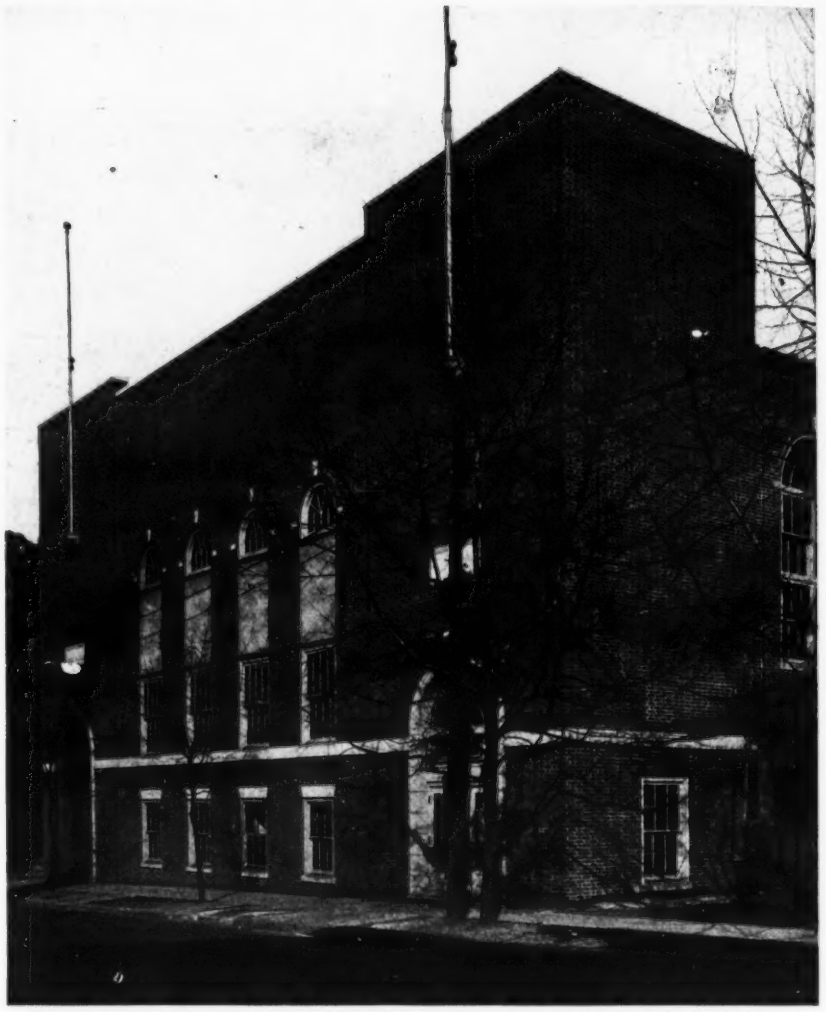
As the senior-high-school situation presented no problem of congestion and as the existing building was in a fair state of preservation and centrally located, consideration was restricted to the expansion of educational facilities, particularly physical education. As the existing building and the small site did not permit of a detached addition, nor even an annex in close proximity, ground was acquired across the street from the present building. On this site a gymnasium building was erected, which contains a double gymnasium 78 by 88 ft., capable of di-



Second Floor Plan.



First Floor Plan.

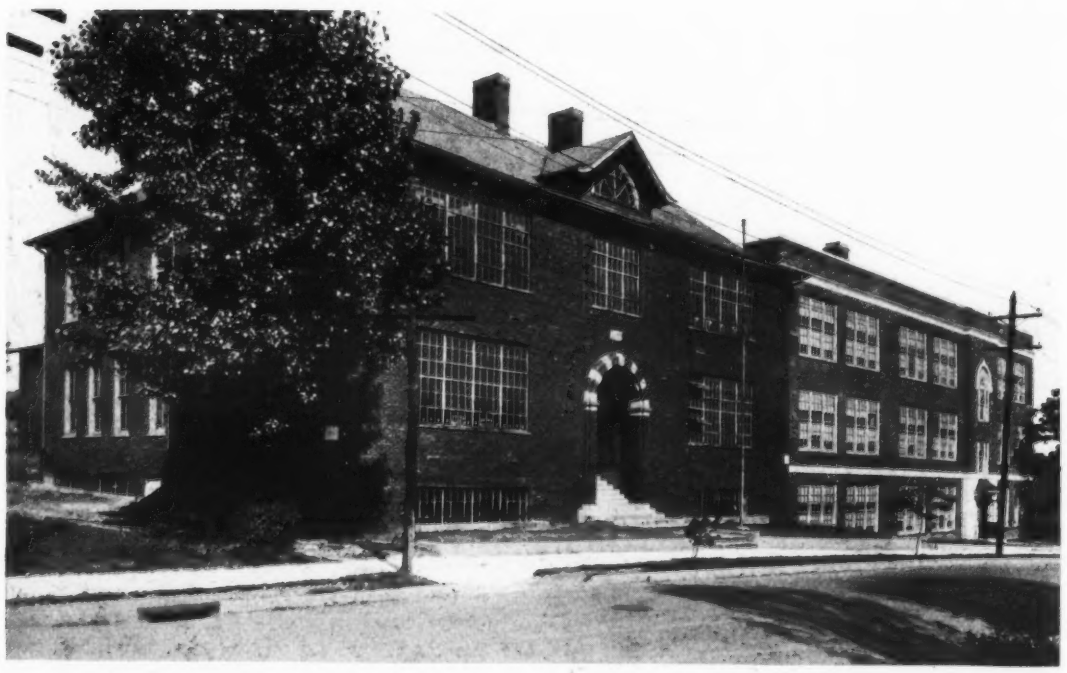


DETAIL, DETACHED GYMNASIUM ANNEX TO THE SENIOR HIGH SCHOOL, KNOXVILLE, TENN.
William B. Ittner, Consulting Architect, St. Louis, Mo.
Barber and McMurray, Architects, Knoxville, Tenn.
Illustration shows a two-floor building with the large double gymnasium above and corrective gymnasiums, offices, and all accessory rooms below.

PARK CITY JUNIOR HIGH SCHOOL, KNOXVILLE, TENN.

William B. Ittner, Consulting Architect, St. Louis, Mo.

Baumann and Baumann, Local Architects, Knoxville, Tenn.



ADDITION TO MAYNARD ELEMENTARY SCHOOL, KNOXVILLE, TENN.
William B. Ittner, Consulting Architect, St. Louis, Mo.
Baumann and Baumann, Local Architects, Knoxville, Tenn.

vision, and planned to accommodate 800 spectators. It includes also two smaller corrective gymnasiums, four combination office and examination rooms, and the required number of physical education accessories. This gymnasium annex and an addition to the old heating plant solved the immediate problem of the senior high school.

The Negro High School

While the Negro population in Knoxville is small compared with most southern cities, still the problem of congestion was proportionately greater. Aside from an attached addition to one of the elementary schools previously mentioned and three two-room buildings to accommodate isolated groups of colored children, a new senior high school was built. The plan for this building approximated closely the typical plan for the white junior high schools, including an auditorium-double gymnasium with stage, seating capacity 800, shops, homemaking suite, library, health rooms, and cafeteria. An auditorium apart from the gymnasium is planned for the next unit added.

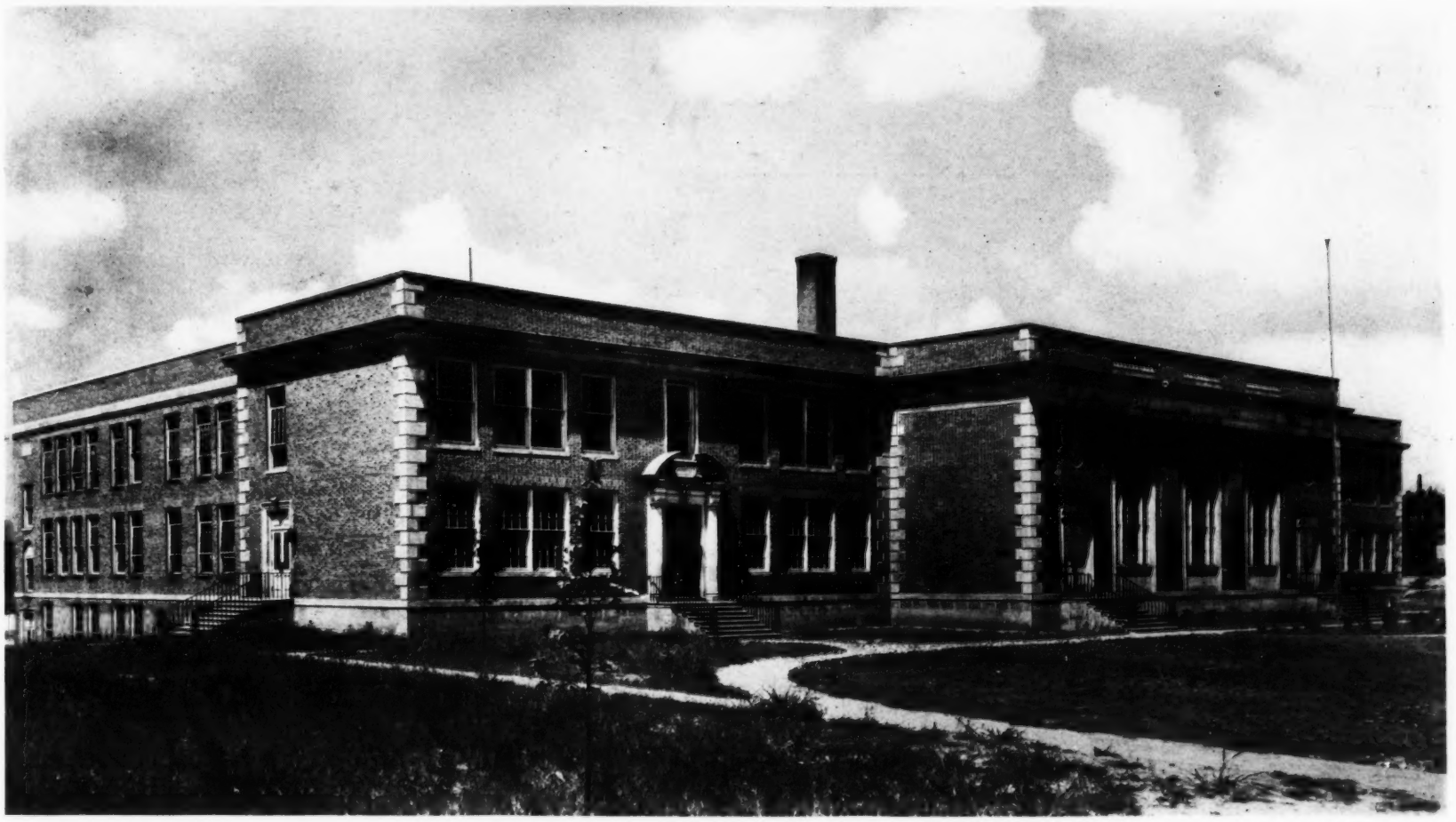
Administration

Knoxville followed the current practice of placing the administrative headquarters in an independent building convenient of access to the entire community and planned and equipped for the grouping of school executives and administrative experts who organize and plan schools, who control the school plants, who supervise instruction, and who keep the records and accounts.

The board bought two residences, adjacent to the new high-school gymnasium, and had them completely remodeled for the administrative departments.

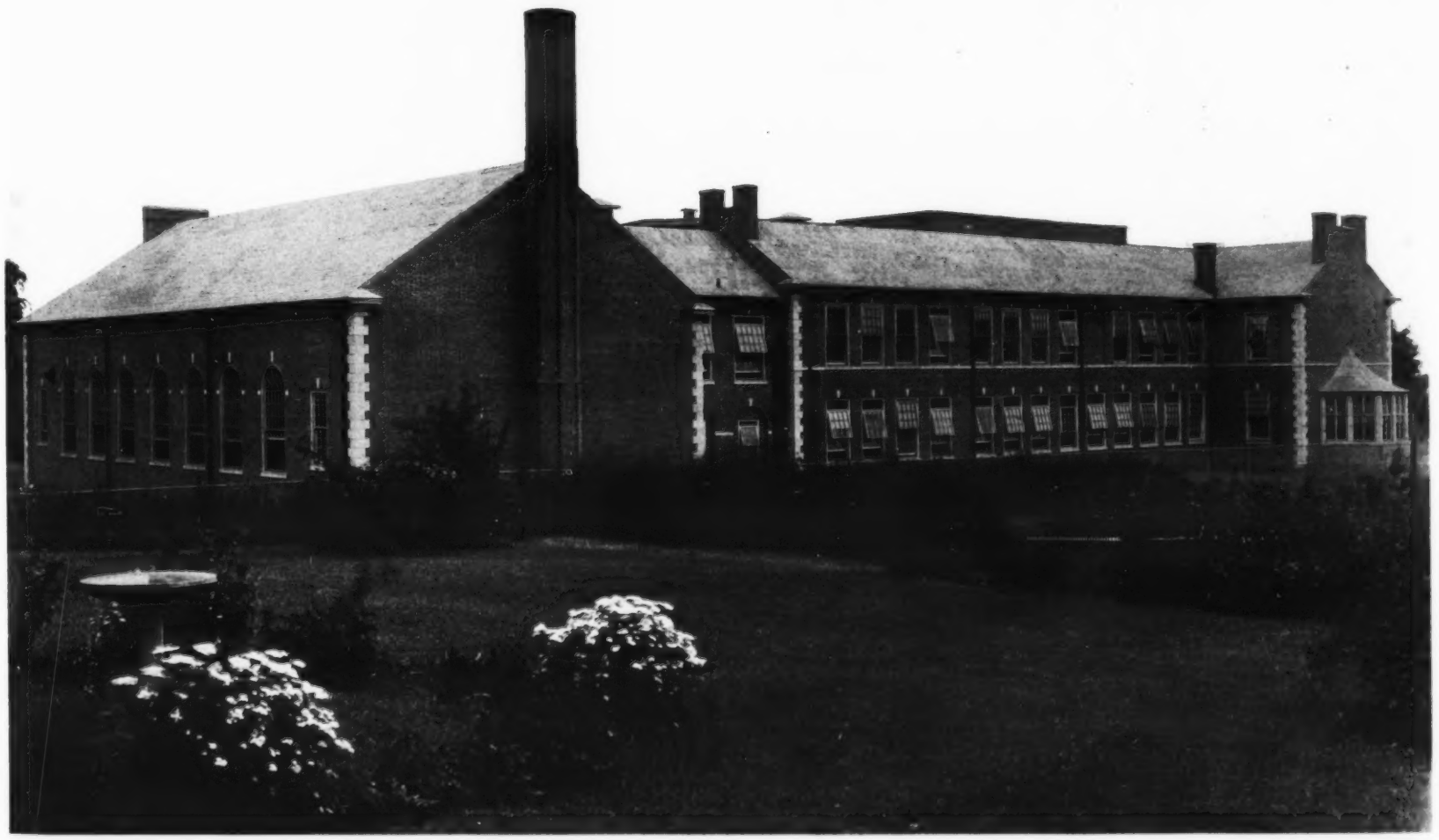
Factors Making for Success of Program

The immediate program extended over a period of two years. The principal factors in its success were probably due to the adherence to the adopted policies and to the fact that the same board membership continued to serve during the entire program. Mention should also be made of the fact that building matters were handled expeditiously. There were no long delays nor strikes during the progress of the work. Furthermore, the buildings were planned for a definite forward-looking educational program and type of organization, insuring their service efficiency from the beginning.



PARK CITY JUNIOR HIGH SCHOOL, KNOXVILLE, TENN.
William B. Ittner, Consulting Architect, St. Louis, Mo.
Baumann and Baumann, Local Architects, Knoxville, Tenn.

The Park City represents the typical junior high school for Knoxville. It is planned for 1,000 pupils and is located on an 18-acre site. The plan shows two stories and an arrangement around a central open court. The auditorium forms the central feature of the main front facade and has two direct outside entrances.
Cost—$307,520, yielding a per capita cost of $307.52.



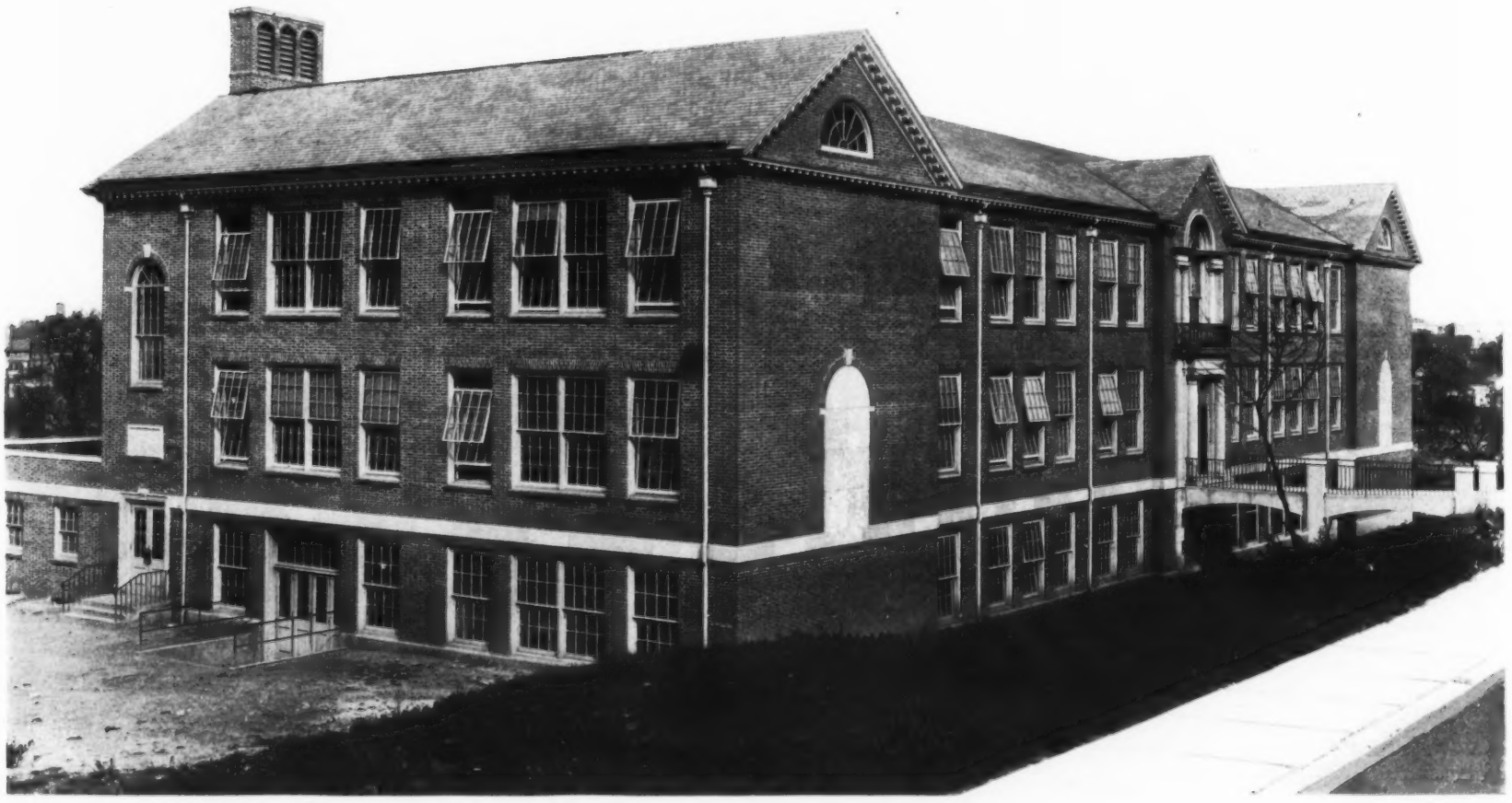
BROWNLOW ELEMENTARY SCHOOL, KNOXVILLE, TENN.
William B. Ittner, Consulting Architect, St. Louis, Mo.
Baumann and Baumann, Local Architects, Knoxville, Tenn.

This attached addition represents two-thirds of the new typical elementary school. Only a part of the roof of the old building can be seen in the picture. Eventually the remaining one-third of the new typical school will replace the old building.

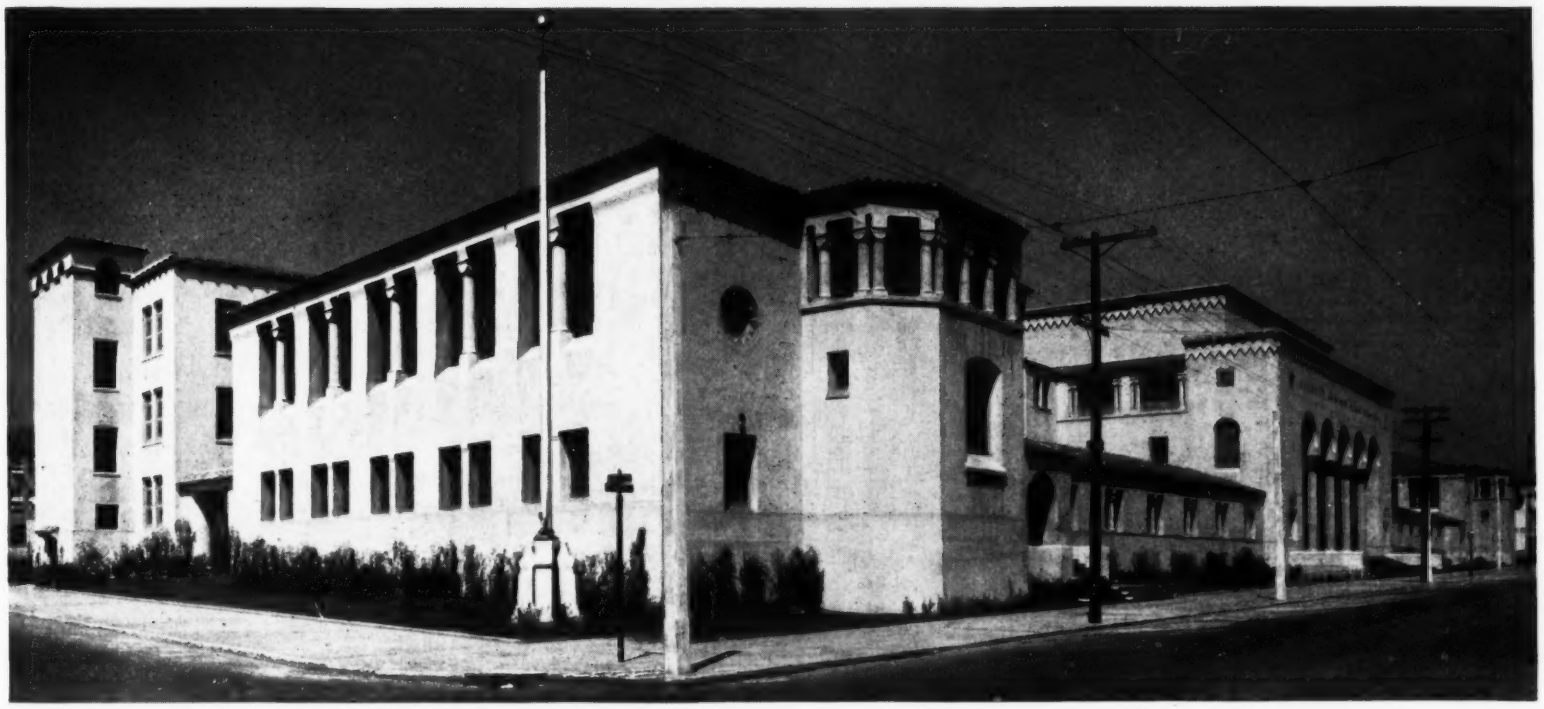


FLENNIKEN ELEMENTARY SCHOOL, KNOXVILLE, TENN.
William B. Ittner, Consulting Architect, St. Louis, Mo.
Barber and McMurray, Local Architects, Knoxville, Tenn.

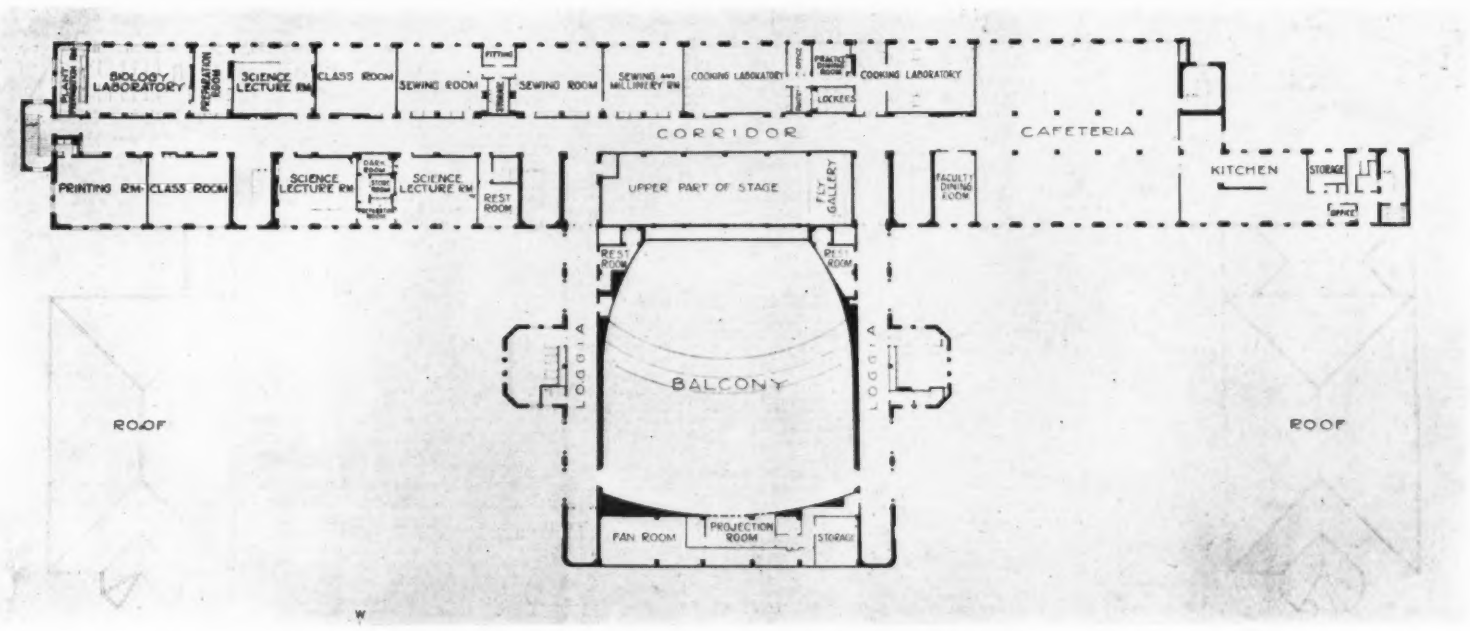
The two new wing additions to this school added a difficult planning and design problem. The old building, which forms the main central portion, came in for much architectural surgery in bringing the exterior into harmony with the wings.



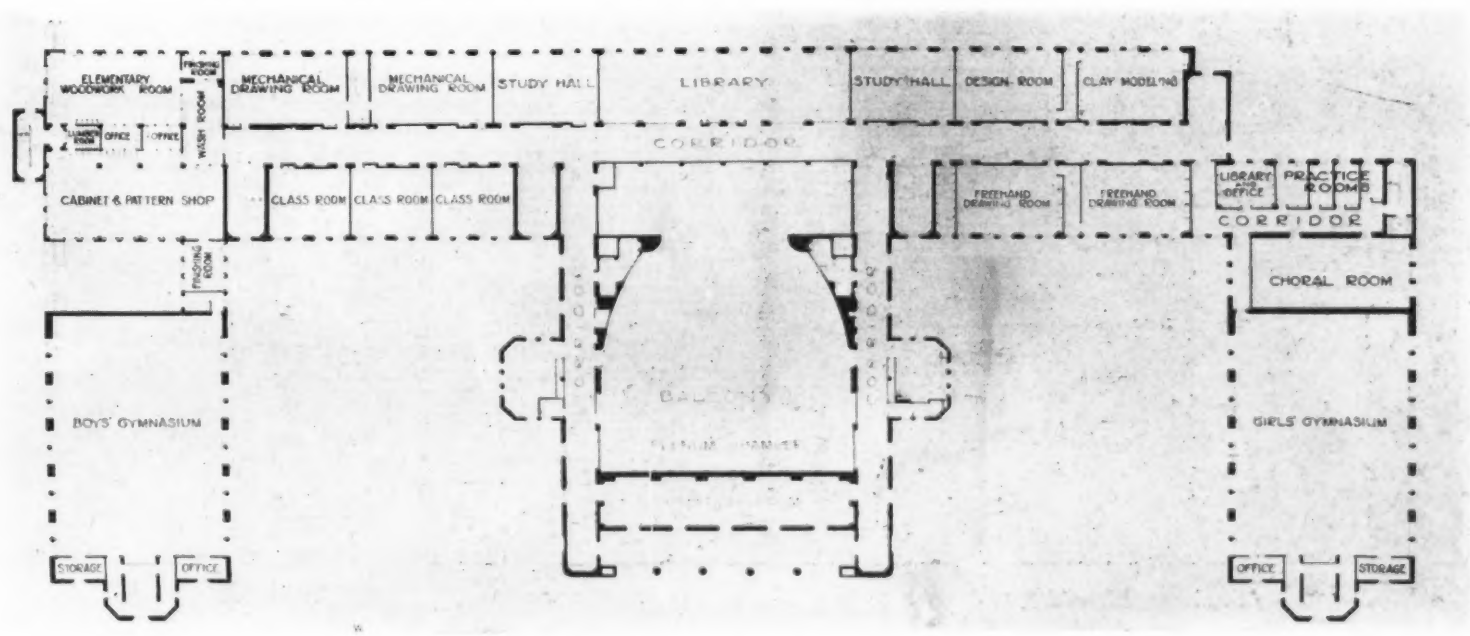
AUSTIN HIGH SCHOOL, KNOXVILLE, TENN.
William B. Ittner, Consulting Architect, St. Louis, Mo.
Baumann and Baumann, Architects, Knoxville, Tenn.



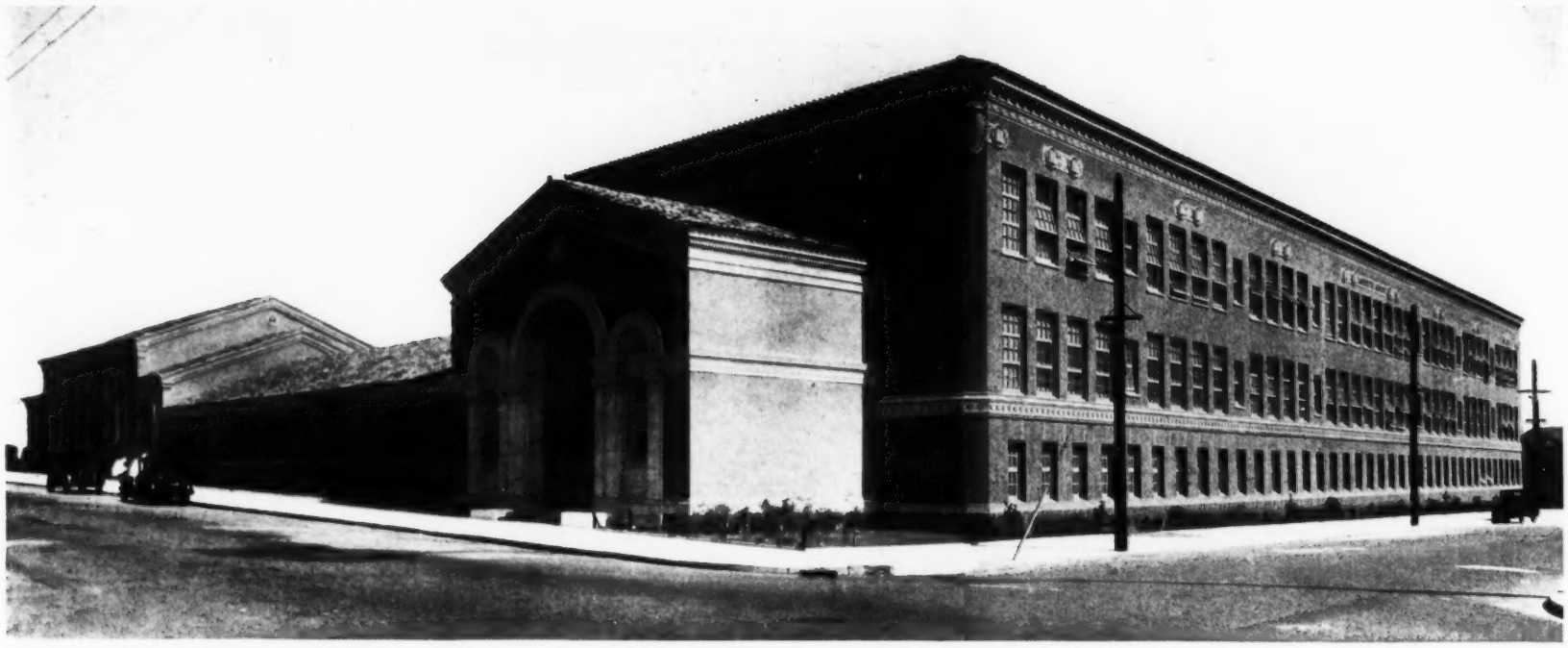
EVERETT JUNIOR HIGH SCHOOL, SAN FRANCISCO, CALIF.
Bakewell and Brown, Architects, San Francisco, Calif. (See Page 83.)



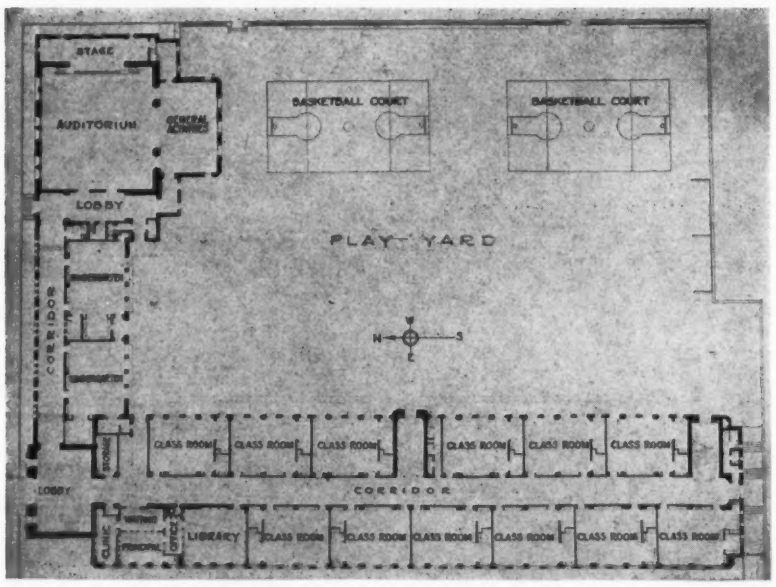
THIRD FLOOR PLAN, EVERETT JUNIOR HIGH SCHOOL, SAN FRANCISCO, CALIF.
Bakewell and Brown, Architects, San Francisco, Calif.



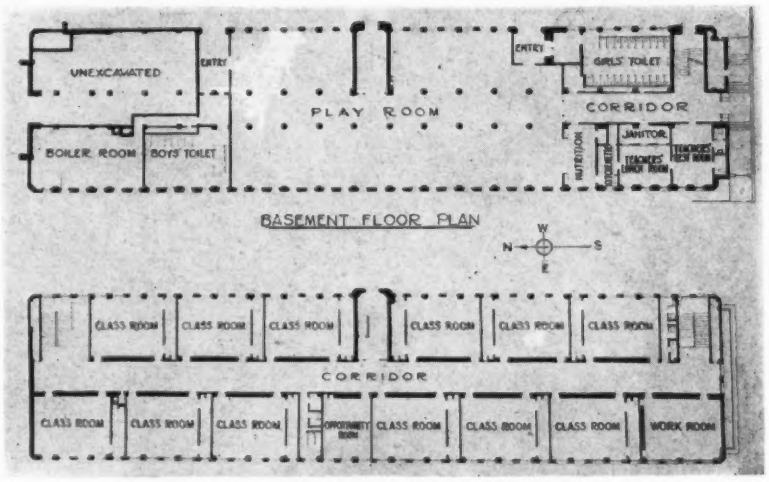
SECOND FLOOR PLAN, EVERETT JUNIOR HIGH SCHOOL, SAN FRANCISCO, CALIF.
Bakewell and Brown, Architects, San Francisco, Calif.



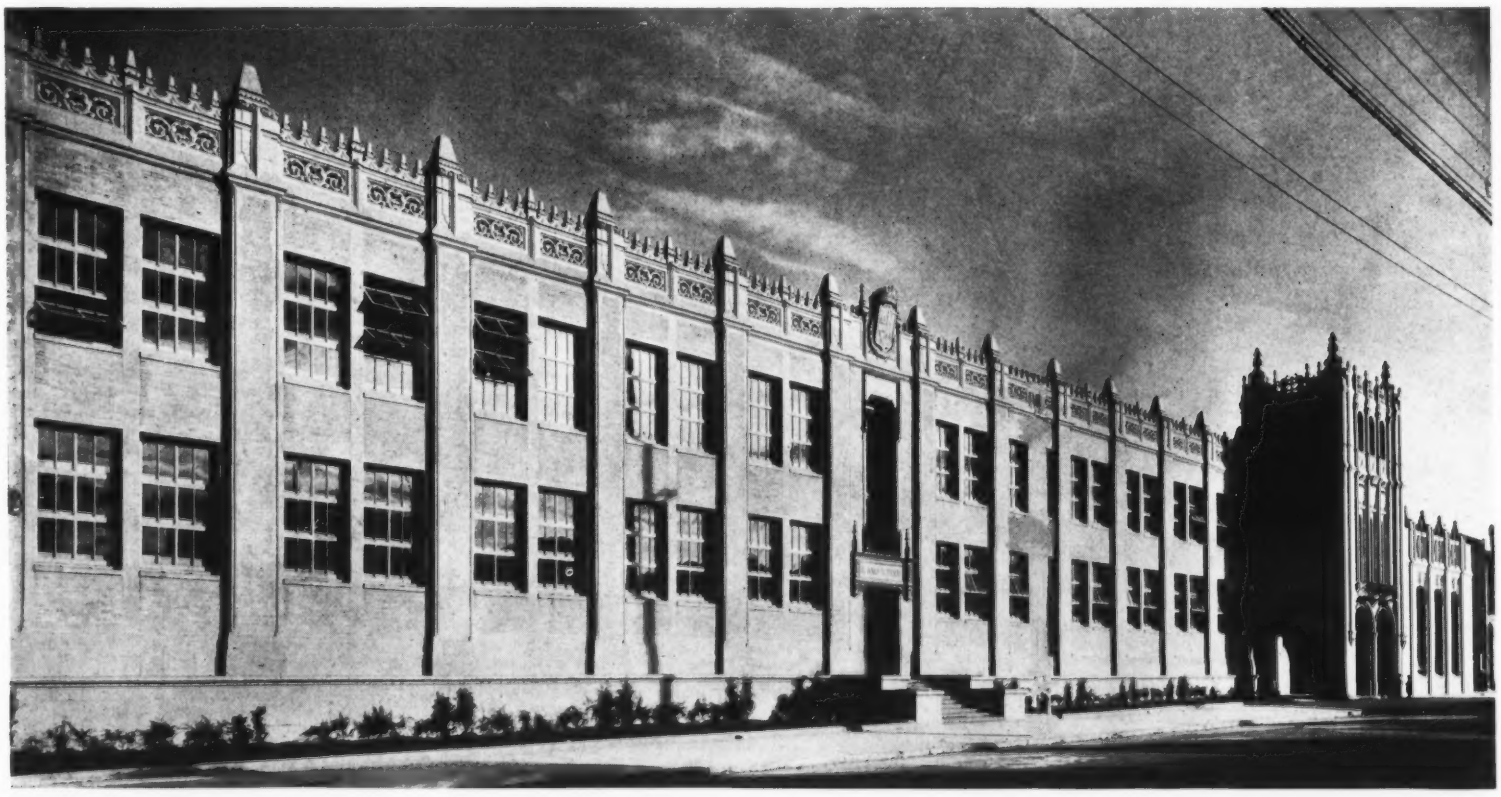
LAFAYETTE SCHOOL, SAN FRANCISCO, CALIF.
Ward and Blohime, Architects, San Francisco, Calif.



FIRST FLOOR PLAN, LAFAYETTE SCHOOL, SAN FRANCISCO, CALIF.
Ward and Blohime, Architects, San Francisco, Calif.



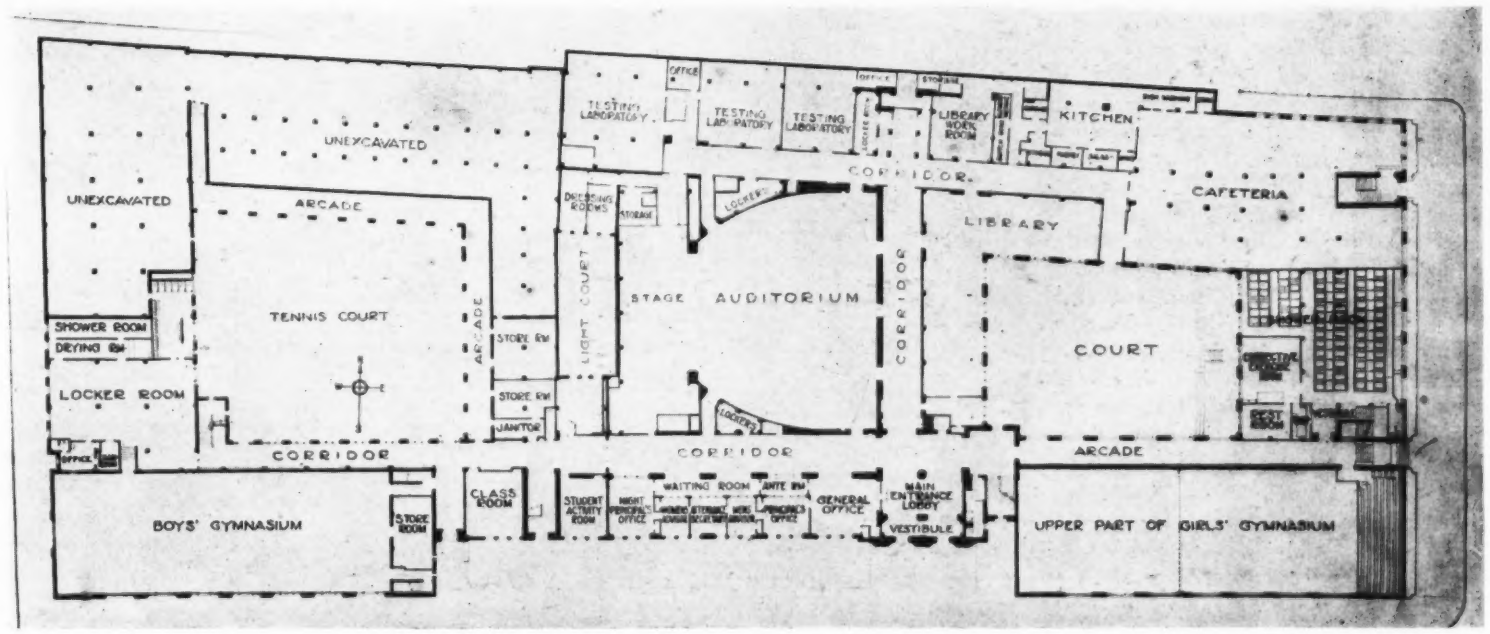
BASEMENT AND SECOND FLOOR PLAN, LAFAYETTE SCHOOL, SAN FRANCISCO, CALIF.
Ward and Blohime, Architects, San Francisco, Calif.



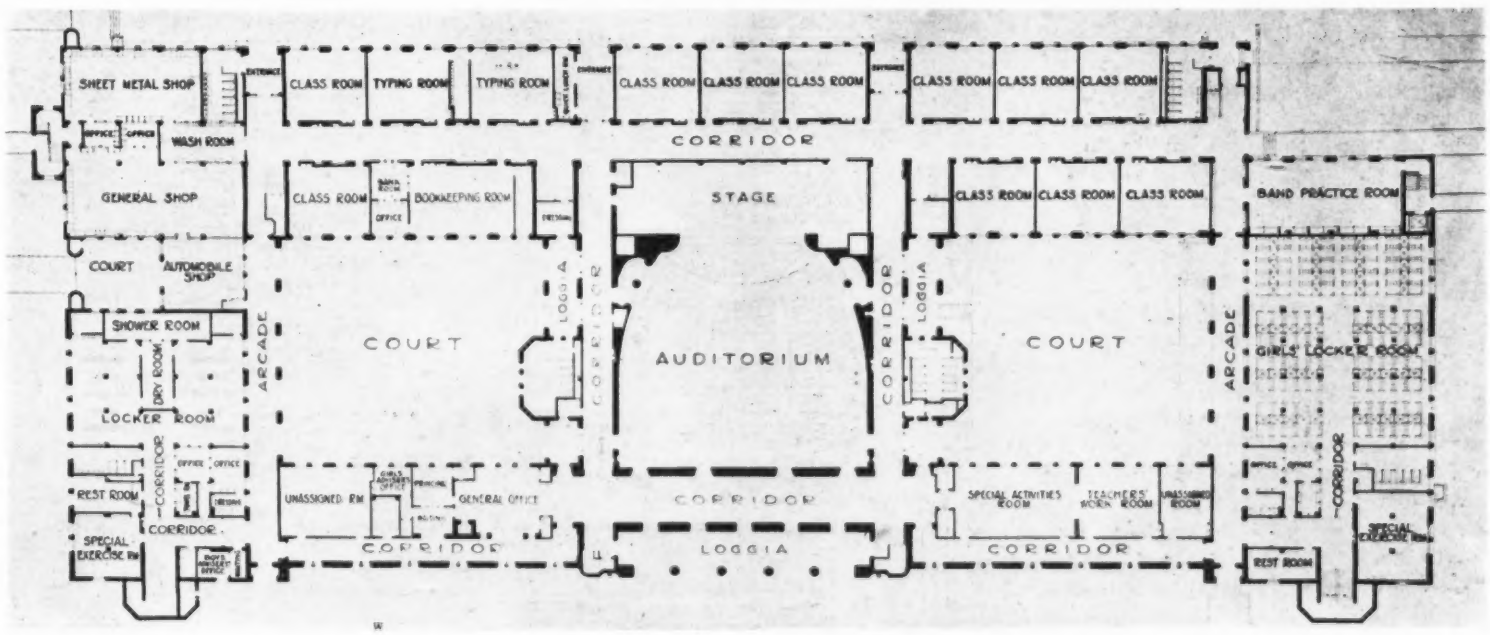
ALAMO SCHOOL, SAN FRANCISCO, CALIF.
Miller and Pflueger, Architects, San Francisco, Calif.



MISSION HIGH SCHOOL, SAN FRANCISCO, CALIF.
John Reid, Architect, San Francisco, Calif. (See Page 83)



FIRST FLOOR PLAN, MISSION HIGH SCHOOL, SAN FRANCISCO, CALIF.
John Reid, Architect, San Francisco, Calif.



FIRST FLOOR PLAN, EVERETT JUNIOR HIGH SCHOOL, SAN FRANCISCO, CALIF.
Bakewell and Brown, Architects, San Francisco, Calif.



EDISON SCHOOL, ROCK ISLAND, ILL.
Cervin, Horn and Stuhr, Architects, Rock Island, Ill.

THE NEW EDISON SCHOOL, ROCK ISLAND, ILLINOIS

The new Edison school has been planned and erected by the Rock Island board of education with the idea of expanding it eventually into a complete elementary and junior high school. The sections which have been built are for the present being operated as an elementary school. Later, as the neighborhood which the building serves grows in population, the building will be enlarged for use as a junior high school.

The exterior of the building is very pleasing and has been developed without superfluous decorative features involving increased costs. The architects used a hip roof in the design of the building because of the location. Their better judgment for economy and utility would have required a flat roof. It was felt, however, that, inasmuch as the building is just below a high hill, which is part of Rock Island's better residential section, a slanting roof covered with slate would make the building architectually more acceptable.

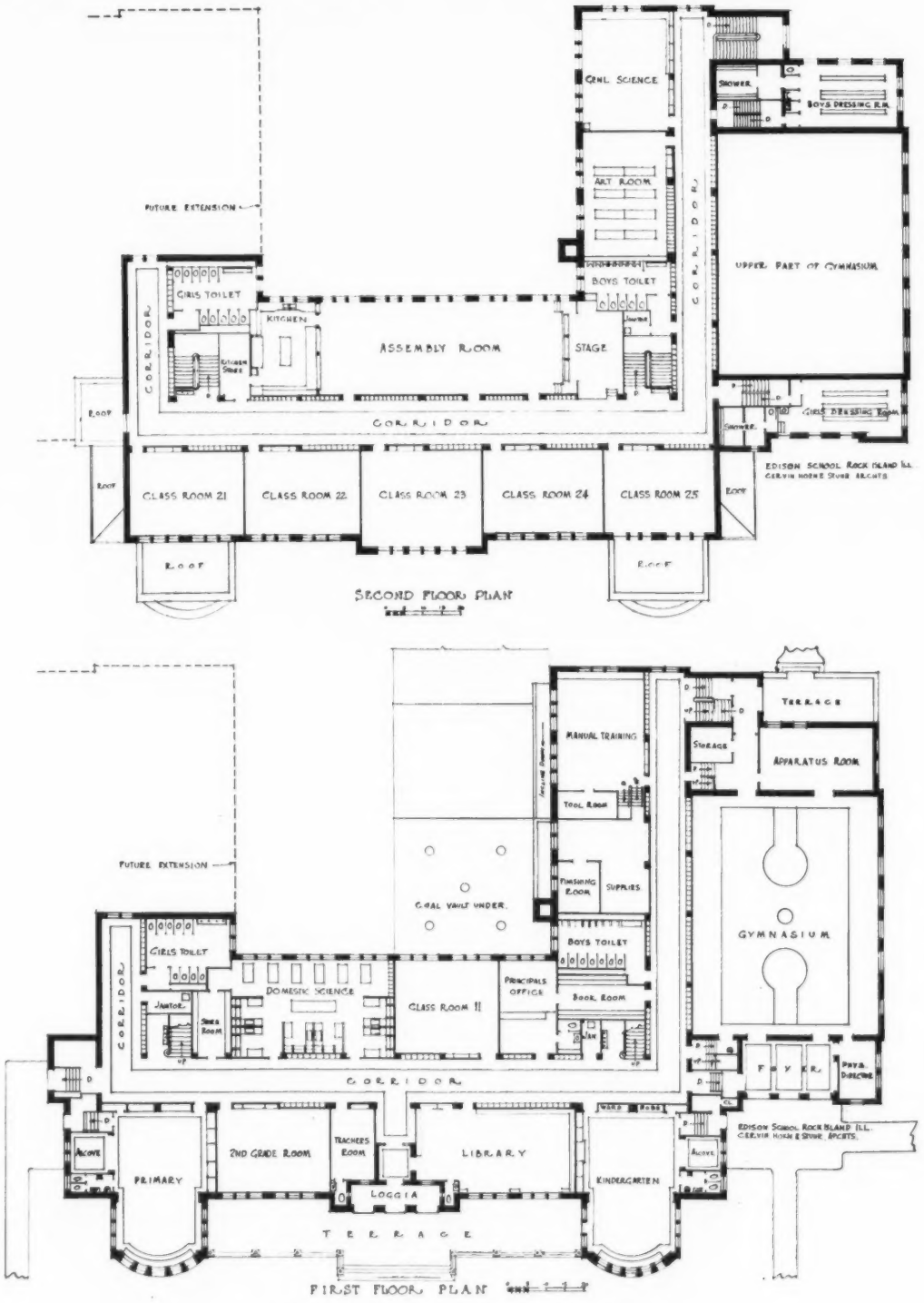
The building as planned at present contains classrooms and special spaces for shops, workrooms, a kindergarten, a cafeteria, a public-library branch, and a bookstore.

The auditorium at present is arranged for classwork and study. The future addition will provide for a formal auditorium. The present small room seats a little over 200 persons and will be adequate for meetings of the school and of school organizations.

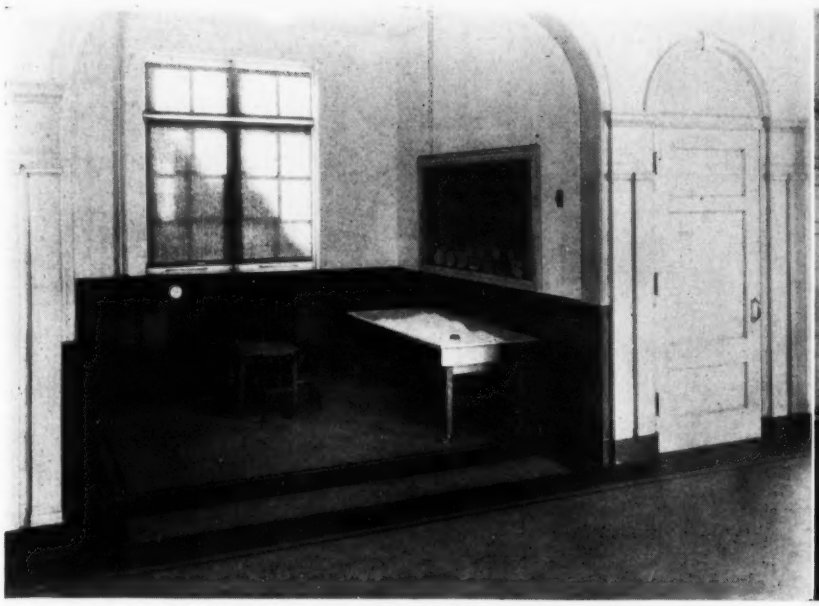
The cooking room is rather unique in that it is arranged as a series of unit kitchens, each unit complete in every particular and suited for groups of four girls. The space in the room adjoining the windows is at present used for sewing.

The kindergarten and primary rooms are especially homelike. Each is complete with toilets, drinking fountains, cupboards, storage space, etc. Each has outside and inside entrances so that the children in the primary and kindergarten classes may enter and use the building without necessarily coming in contact with the rest of the school.

The classrooms and corridors of the building have been especially studied by the architects and the school authorities for meeting the needs of the school program. Every classroom in the building is equipped with cabinets built into the walls and arranged with shelving for storing



EDISON SCHOOL, ROCK ISLAND, ILL.
Cervin, Horn and Stuhr, Architects, Rock Island, Ill.

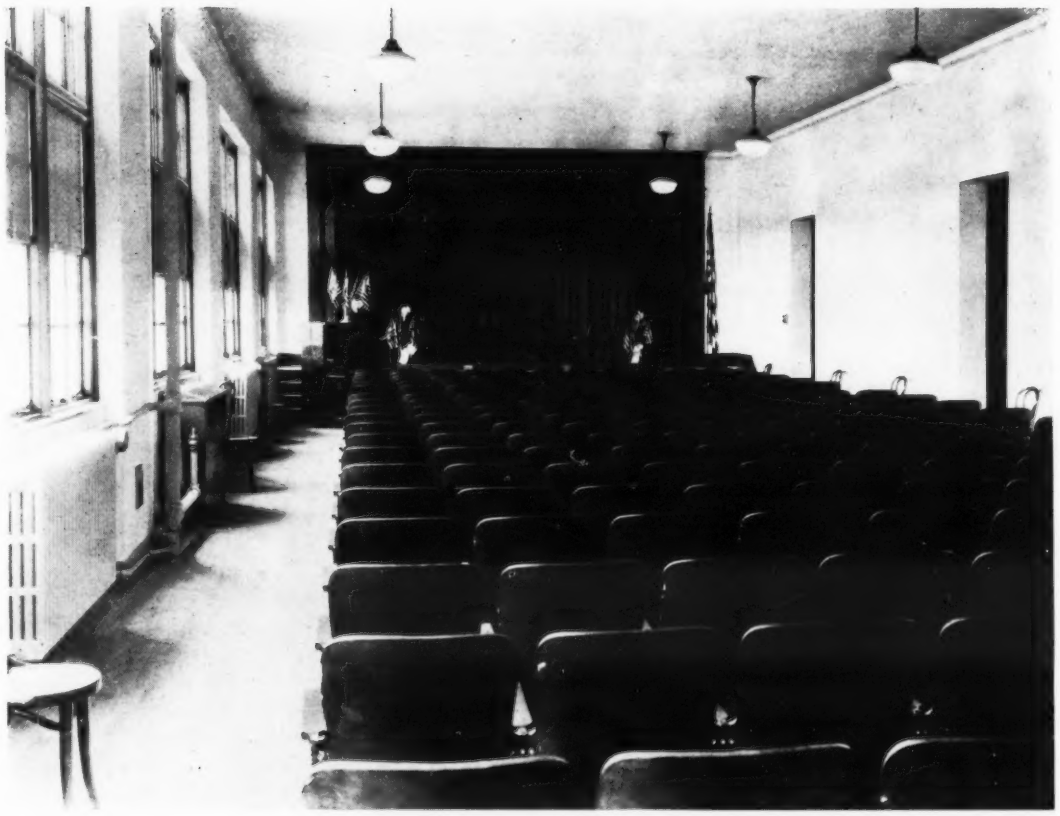


ALCOVE IN KINDERGARTEN



KINDERGARTEN

INTERIOR VIEWS OF THE EDISON SCHOOL, ROCK ISLAND, ILL.
Cervin, Horn and Stuhr, Architects, Rock Island, Ill.



ASSEMBLY HALL, EDISON SCHOOL, ROCK ISLAND, ILL.
Cervin, Horn and Stuhr, Architects, Rock Island, Ill.

teaching materials and students' work. At least one cupboard in each room has open display shelving at the center. Attention has been given to tacking boards for displaying students' work.

The floors of the building have been selected to preserve so far as possible the quiet of the building. Both corridors and classrooms have battleship linoleum top floors. The borders of the corridor floors are terrazzo. In use, these floors have been found especially quiet. There is really no confusion in the Edison School at the passing of classes.

The building contains 772,000 cu. ft. and cost approximately 27 cents per cubic foot, exclusive of sidewalks, grading, and architects' fees. The price is especially low in view of the high grade of construction and finish maintained throughout.

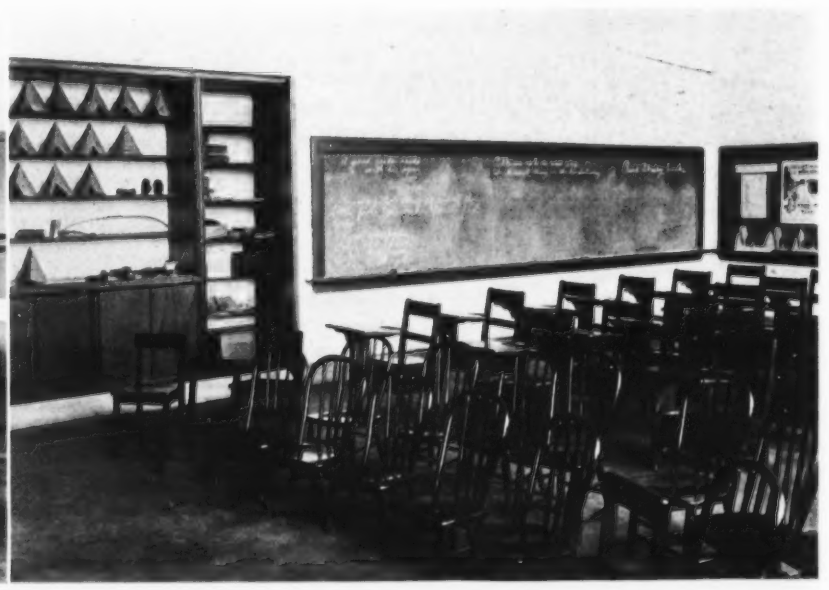
TO OBSERVE CHILD-LABOR DAY

Child-Labor Day will be observed for the twenty-second time on January 26, 27, and 28 in schools, churches, and clubs of the country. The national child-labor committee is this year looking to public opinion to serve as interpreters of its findings and to secure the elimination of child labor. This year the legislatures of 43 states will meet and it is expected that this will give the citizens in these states an opportunity to bring their child-labor laws up to standard.

The national committee offers to send an analysis of the laws of the states, and other material for use in the observance of child-labor day to any school official who will write to the committee at its offices, 215 Fourth Ave., New York City.



COOKING ROOM

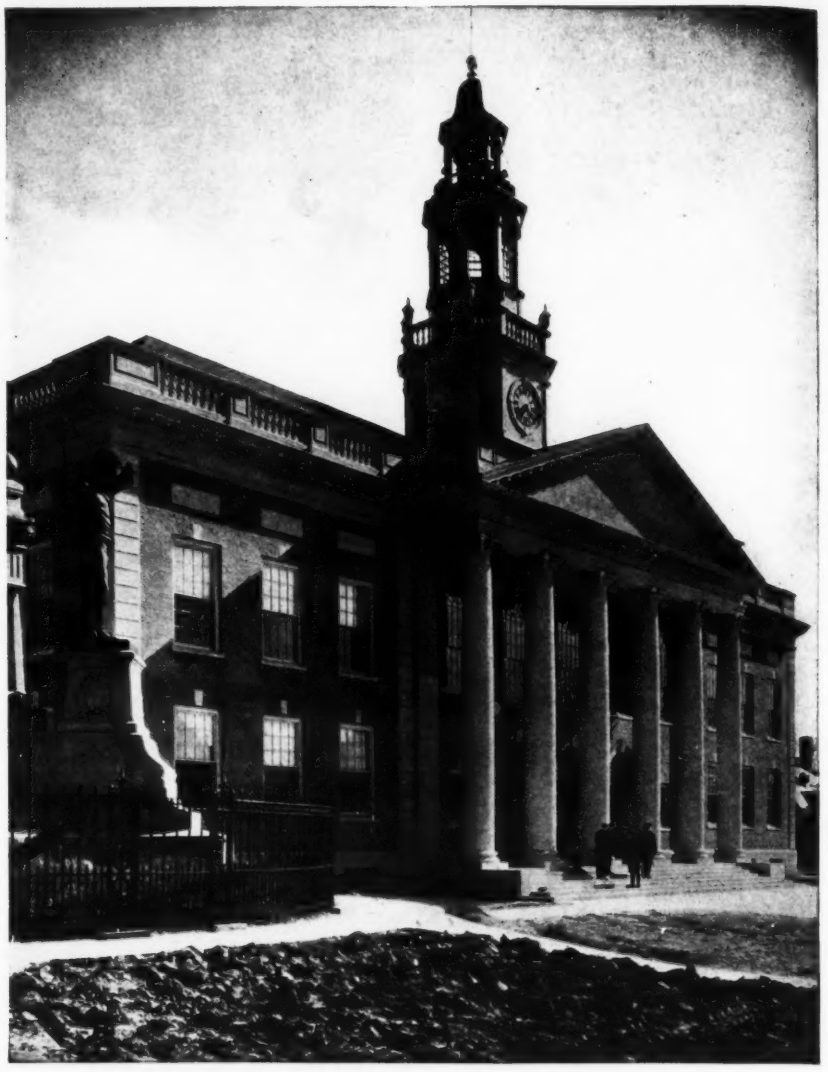


A TYPICAL CLASSROOM

INTERIOR VIEWS OF THE EDISON SCHOOL, ROCK ISLAND, ILL.
Cervin, Horn and Stuhr, Architects, Rock Island, Ill.



LOBBY AND ROTUNDA, TOWN OFFICE BUILDING, WEBSTER, MASS.
M. A. Dyer Company, Architects, Boston, Mass.



MAIN ENTRANCE, TOWN OFFICE BUILDING, WEBSTER, MASS.
M. A. Dyer Company, Architects, Boston, Mass.

A Civic Group of Note

The Webster, Mass., Town Offices, Auditorium, and High School

School authorities and municipal authorities have generally kept municipal offices and school buildings separate and apart. Apparently the theory has been that school children and teachers should not come in contact with city officials and citizens who must transact public business. School authorities have always seemed to hold themselves aloof from the administrative officials of local communities, and while perhaps in many instances, there has been a gain, it is certain that not frequently there has been a serious loss by the lack of contact.

The City of Webster, Mass., has recently completed a building that deserves attention not merely because it combines under one roof a town office, a municipal auditorium, and a junior-senior-high-school building, but because this unique combination forms a civic group that is of the widest possible social and community service to a live town.

The project had its inception in 1922, when the need for additional room for the Bartlett High School, a building erected in 1905 and typical of the architecture of that period, had been plainly outgrown by the increase of the school population. In 1923, the town purchased the property adjoining the high school, and to the rear of the building a three-cornered plot of ground facing Main Street, the most important street of the city, and Church and Negus Streets, quiet residence streets.

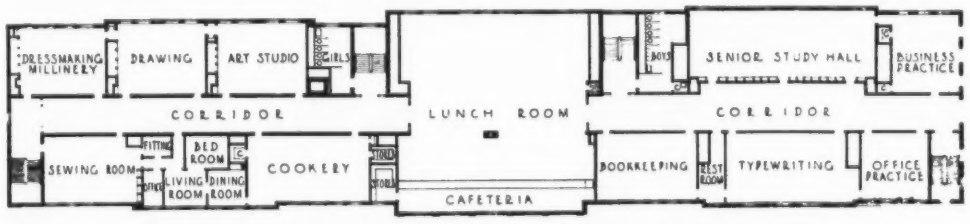
The plans for the development of the site and of the building were slowly matured, and in the spring of 1926, the architects, Messrs. M. A. Dyer & Company, were chosen to draw the plans and supervise the construction of the building. The scheme for the building, as will be noted from the plot plan, was to place the town hall with its beautiful cupola to face Main Street. The existing high school was remodeled and the high school proper was added to it, facing Negus Street. The auditorium was planned to connect the town hall and the high school, and was to be arranged so that it would serve both institutions. The high-school section of the building was completed for occupancy in the fall of 1927, and the town offices were completed during the winter of 1927-28. The entire building was dedicated formally on May 28, 1928.

An idea of the size of the building may be gained by the frontage of the senior and junior high school on Negus Street, extending 325 ft. over all and 211 ft. from Negus Street to Main Street. The town office portion directly on Main Street is 127 ft. 6 in. over all. The new portion contains approximately 2,000,000 cu. ft.

When the committee decided that the most economical plan for the municipal group was a single building, the problem was to add to the existing school in such a fashion that it would appear a wing of the finished building. Although the Bartlett High School did not look as one would picture a modern school, a careful examination revealed its possibilities, and it was decided to extend the building along Negus Street, carrying the main corridor through its entire length. A central pavilion was brought forward to separate the new wing from the old sufficiently to conceal the difference in thickness and to mask the variation in fenestration.

Besides changing the windows in the old school from large to small panels, the hip roof was removed, the brickwork extended up the few feet to make a complete story, and topped with a stone cornice and balustrade. As the ground dropped away toward Church Street, it permitted an extra story at the end, thus providing an ample gymnasium and boiler room, without increasing the height of the building. This left the old building with three full stories and basement, the central portion with four stories, and the portion toward Church Street with four stories and basement.

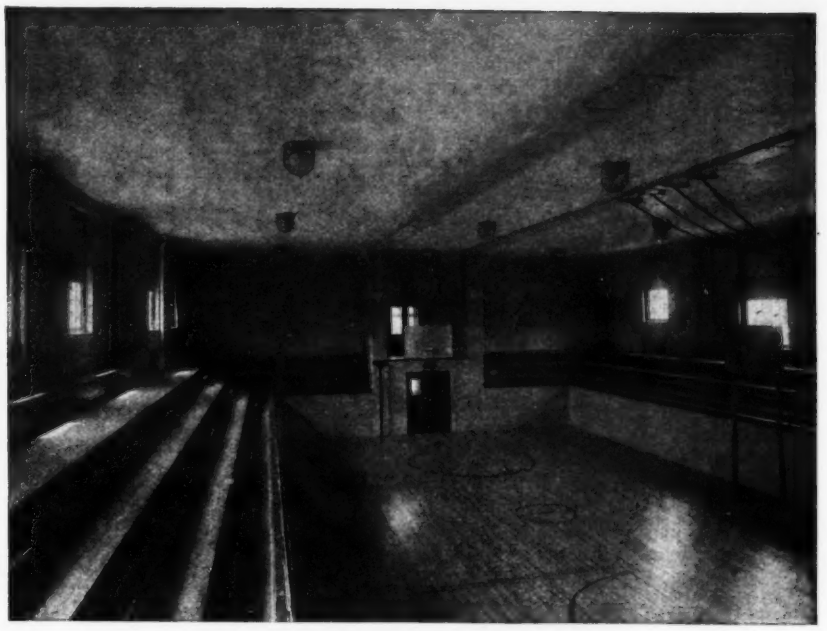
It seemed natural to follow colonial precedents in designing the new building. The existing school lent itself well to this treatment. The main horizontal lines of the old building have been carried through, and the central pavilion



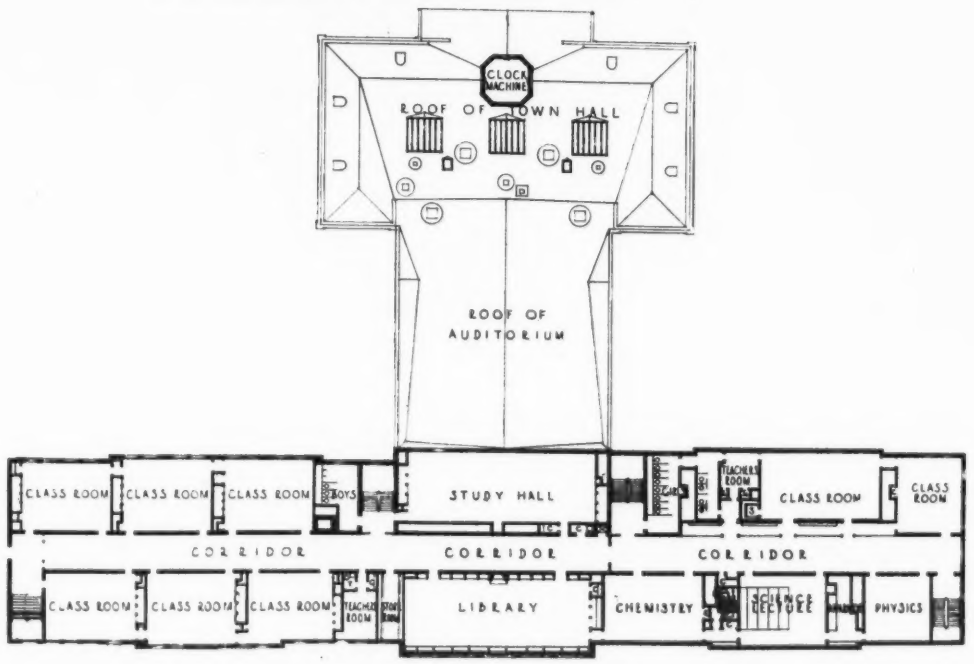
FOURTH FLOOR PLAN, HIGH-SCHOOL BUILDING, WEBSTER, MASS.
M. A. Dyer Company, Architects, Boston, Mass.



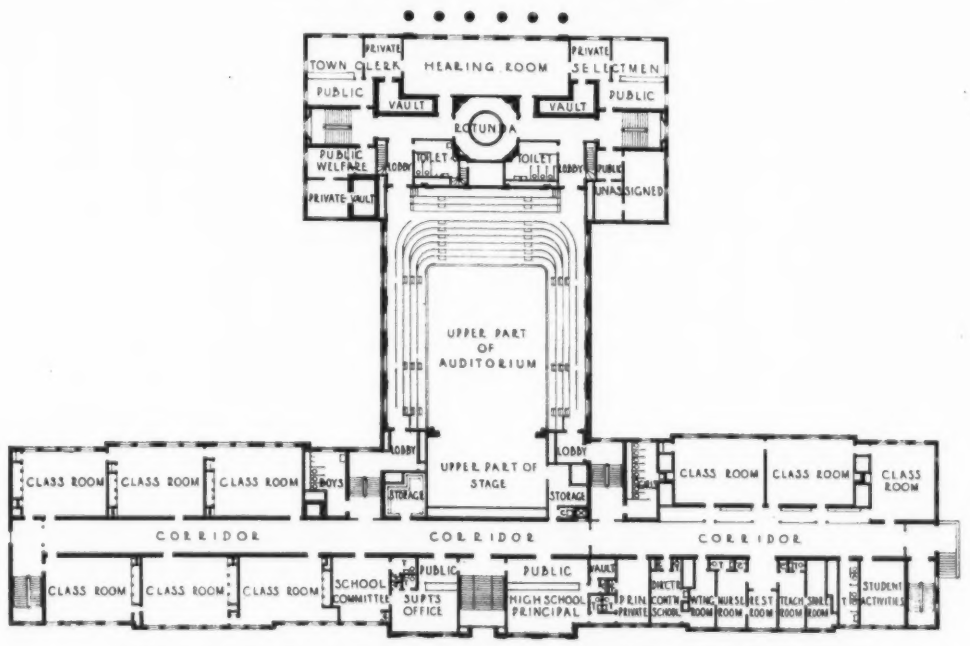
PORTION OF LIBRARY, HIGH SCHOOL, WEBSTER, MASS .
M. A. Dyer Company, Architects, Boston, Mass.



GYMNASIUM, HIGH SCHOOL, WEBSTER, MASS.
M. A. Dyer Company, Architects, Boston, Mass.



THIRD FLOOR PLAN, WEBSTER MUNICIPAL BUILDING, WEBSTER, MASS.
M. A. Dyer Company, Architects, Boston, Mass.



SECOND FLOOR PLAN, WEBSTER MUNICIPAL BUILDING, WEBSTER, MASS.
M. A. Dyer Company, Architects, Boston, Mass.

on Negus Street emphasized by a group of Corinthian pilasters extending through the third and fourth stories, four of them carrying a stone pediment, filled with a clock surrounded by Georgian leafage. The windows on the third floor between these pilasters have stone enframements and pedestals, all of which rest on the stone belt course which here forms a crown molding for the rusticated stonework of the first and second stories.

Although varying in actual size, the windows beyond the central portion of the new wing are arranged to recall those of the old as much as possible, but on the rear, as the two wings are more widely separated, more of an effort has been made to indicate the internal arrangement, with groups of small windows in the classrooms, larger ones in the gymnasium, and single windows staggered according to the landings, indicating the stairs. Interest has been gained on the Church Street end of the school portion by the gymnasium entrance, which has been carried up through the basement and first floors and surrounded by heavy stone rustication.

The Town Office Building

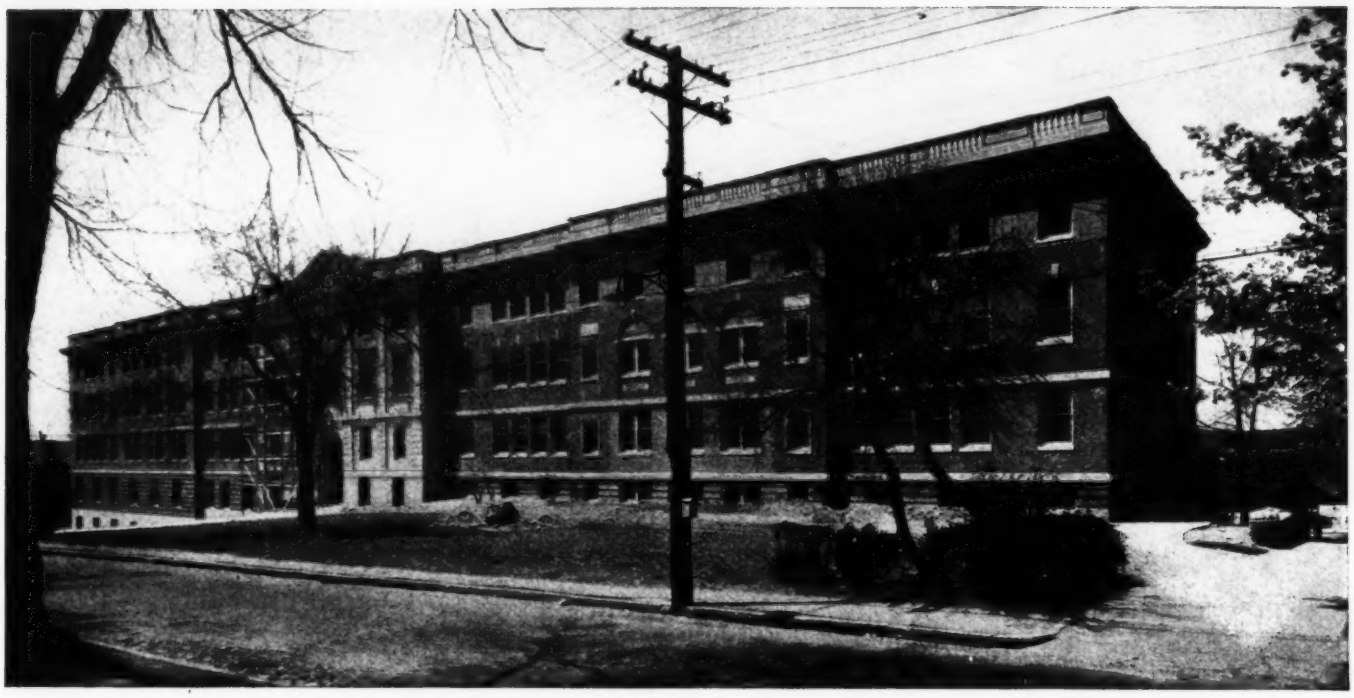
The town office building, although treated similarly, has been given a hipped roof behind the balustrade, which builds up into the cupola. The connecting link of the auditorium, however, follows the school, having a flat roof. The auditorium is treated as simply as the school, but the relation of the larger round-headed windows on the balcony level to the small rectangular ones underneath is pleasing as well as expressive. The auditorium located between the high-school and town-office units, and entered directly from all, acts as a school auditorium and town hall, and has independent egress facilities.

The readers of the JOURNAL will perhaps not be interested in the details of the plan and construction of the town offices. The treatment of the interior throughout is formal, in keeping with the dignity which may be expected in a municipal office building. A handsome room in the town office is the public hearing room, which has been carried out in formal colonial style. The rotunda and lobby are formal, finished with marble walls and floors.

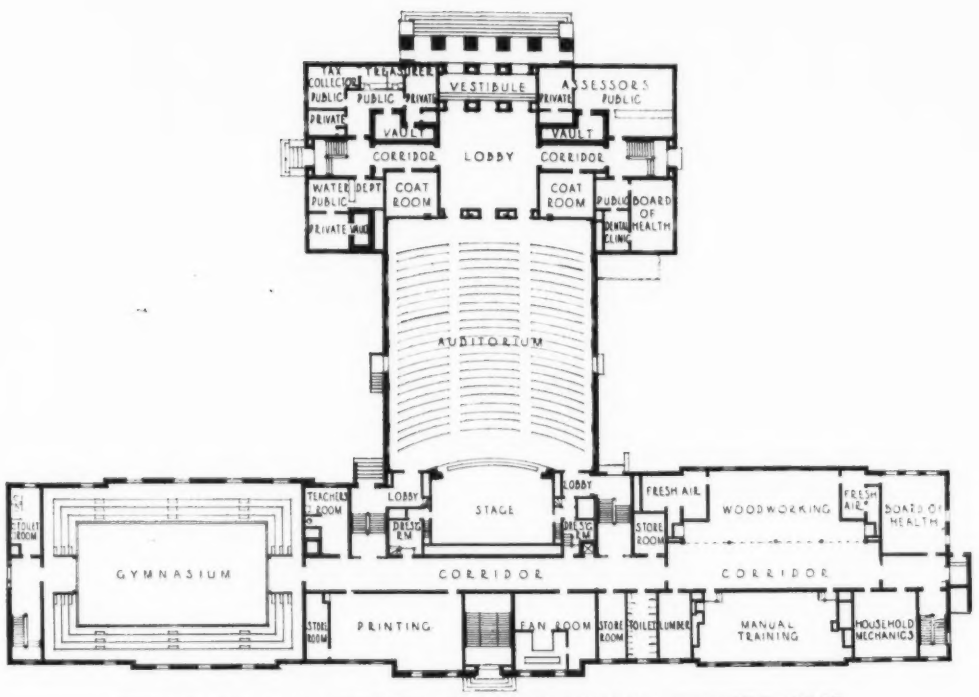
The Auditorium

From the lobby, one enters by three doors into the main floor of the auditorium, which is connected at the other end to the school, by means of doors at either end of the stage, at the levels of both the floor and balcony.

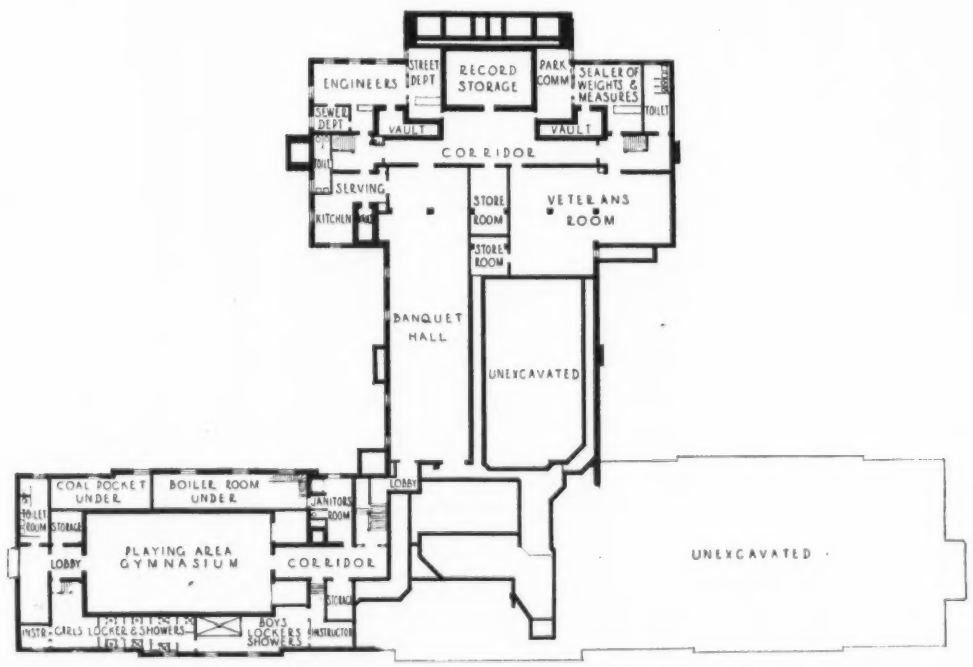
Altogether the auditorium seats 1638, and is a handsome and beautifully lighted room. The balcony walls are broken by flat pilasters, supporting the ceiling beams, and the walls underneath the balcony are paneled. The paneling is carried across the front of the stage, and the balcony rail is similarly but more elaborately treated. The trim around the doors, as well as their pediments, which, however, occur only on the second floor, are elaborately and beautifully carved. The walls are painted in shades of warm gray, grading down from the ceiling which is almost white. The bold proscenium arch with its handsome ornament of leaves, fruit, and



NEGUS STREET VIEW OF MUNICIPAL GROUP (HIGH SCHOOL), WEBSTER, MASS.
M. A. Dyer Company, Architects, Boston, Mass.



FIRST FLOOR PLAN, WEBSTER MUNICIPAL BUILDING, WEBSTER, MASS.
M. A. Dyer Company, Architects, Boston, Mass.



BASEMENT FLOOR PLAN, WEBSTER MUNICIPAL BUILDING, WEBSTER, MASS.
M. A. Dyer Company, Architects, Boston, Mass.

flowers is mottled in similar but deeper tones, which also blend perfectly with the rich curtains of old-rose velvet. The stage, capable of seating 250, has paneled walls and is equipped with two complete sets of scenery. Adjoining the stage are dressing and scenery rooms.

The School Interior

The chief thought in finishing the interior of the school was to make it efficient as well as attractive. In the classrooms, the walls are a light corn color, and the ceilings are practically white. The dadoes are painted a light brown, matching the tone of the simple woodwork. The same scheme is carried into a large vestibule, with beautifully ornamented plaster cornice and simple paneled walls. Here a flight of stairs leads to the second floor, giving access to the offices of the superintendent of schools and the principal. Opposite the entrance is the rear of the stage, with stair wells at either side which are supplemented by those at the east and west ends of the building.

The School Library

The entire front of the central pavilion on the third floor is occupied by the library. Here an effort has been made to make the room so attractive that the pupils will be anxious to use it. Between the five windows on the Negus Street side are bookcases 7 ft. 6 in. high, with cupboards below the line of the window sills. In the center of the opposite wall is a handsome chimney piece. The fireplace itself is faced with African black and gold marble, surrounded by a handsomely carved mantel. Carving is also found on the panel of the overmantel and the molding of the broken pediment which crowns it. All the woodwork is a soft shade of brown, with the plaster walls above painted a lighter tone.

On the fourth floor above the library, but extending through the building, is the lunchroom, and adjacent to it extending along the Negus Street front are the rooms devoted to household arts, drawing, and commercial departments. This floor also contains a large senior-high-school study.

The Gymnasium

In the basement, entered directly from Church Street, is the gymnasium, with walls of light-brown brick, and surrounded on four sides by seats accommodating about 700. Under these bleachers are the boys' and girls' lockers, and shower rooms, instructors' apparatus, and storage rooms.

(Concluded on Page 156)

The San Francisco Building Program

Eugene J. Irwin

The population of San Francisco has been on the increase for a number of years. In 1920 the Federal census fixed it at 506,676. In 1928, careful estimates upon the basis of the increased number of electric consumers and telephone owners placed the population at approximately 660,000. The school enrollment increased 30 per cent in the same period, which indicates considerable reliability of the figures. This growth is important in that it plainly shows the problem to be faced by school authorities in accommodating new pupils—between 3,000 and 4,000 each year—and in replacements that are necessary. The enrollment, for instance, increased from 64,463 in 1918 to 98,660 in 1925, or 34,197 in eight years.

Superintendent Joseph Marr Gwinn and the board of education, therefore, had a real problem to face in developing a building program. These problems were ably met. It was to care for the above increase that a $12,000,000 bond issue was voted in 1922. Twenty-eight school buildings or important additions to existing buildings have been planned. Seventeen of these were completed two years ago. Specifications for the remaining plans and buildings were completed so that this money has been accounted for, and the board faces in the school year 1928-29 the problem of construction out of tax money requiring an expenditure in five years of $9,000,000.

To complete this program, however, it was necessary for the board of education to secure the legal right to set the amount required to take care of the upkeep of buildings and to allow for new construction. An assessed valuation of $783,000,000, based on a 40-per-cent valuation means a relatively low school-tax rate. Two million one hundred thousand dollars was decided to be the amount required each year as stated. This was secured in the 1928-29 budget.

The building program has become quite definite. It is a plan which takes into consideration the old, the new, and the contemplated buildings, so that each school child, now, and in the future, will have access near his home to a modern school building, suited to his needs—an elementary building within one-half mile, a junior high school within a mile, and a senior high school within a mile and a half. The program was arranged with the following facts in view: The present location of the homes; the age and school grade of every child in the city; the location, kind, and condition of each school building; and the probable locations of the future homes of the city as shown by the present trends of development.

A definite policy as to size of schools has been adopted. High schools are planned to accommodate a maximum of 2,000 pupils; junior high schools, 1,600 pupils; and kindergarten-six year elementary schools, 900 to 1,000 pupils. An attempt has been made to maintain a definite unit idea as to buildings. In the elementary schools, 24 classrooms, 20 by 30 ft. or 22 by 28 ft., with two kindergarten rooms, 28 by 32 ft., and two opportunity or ungraded rooms, 20 by 30 ft., comprise a building unit. A building unit for a junior high school consists of 20 to 24 classrooms, each 22 by 30 ft., with a pupil capacity of 35; two science laboratories, 22 by 35 ft.; homemaking rooms, rooms for special academic and shop subjects, library space, a gymnasium, and a cafeteria. Of course special services for administration, etc., are provided in each building. The details of these may be gathered from the plans accompanying this article.

Improvements in plan, layout, construction, and equipment have been adopted wherever possible. Windows, for instance, are much improved in recent structures. It is no longer necessary for rooms to be too shaded and sultry, or too light and drafty. Panes push outward and adjustable shades give the right shading and ventilation. Workrooms where special projects may be attempted have also been built in each school.

Each school has an auditorium which is built in a wing apart from the rest of the school. This is designed so that it can be used as a center of neighborhood activities. Each school, in addition, has a library, a place to borrow books, and a comfortable, quiet room in which to read or study.

Each school has at least three iron staircases, one at each end of the building and one in the middle. These are made fireproof. As the walls of the buildings are made of concrete and steel, there is practically no possibility of a fire gaining any headway in a new building.

All auditoriums seating over 400 are of steel-frame class-A construction. This means fireproof curtain walls, reinforced frame with concrete roof and floor slabs, and fireproof concrete stair-towers.

Classrooms are built on both sides of a central corridor running north and south. Deviations from this general arrangement are made only when hilly ground makes a change necessary.

Gymnasiums are of light steel frames and have roofs of slow-burning mill construction. That is, the roof is composed of 3- or 4-in. timbers, with a patent fireproof roof covering on the outside.

Shops are built with plain fireproof walls, steel sash, and modified gymnasium-roof construction.

Recent checking of floor space under the direction of Deputy Superintendent of Schools David P. Hardy, gives some rather interesting data for those interested in this phase of school planning. Only totals can be added here.

Everett Junior High School
Total floor area 162,920 sq. ft.

		Per Cent
1.	Stairs and Corridors	24.39
2.	Administration	12.26
3.	Walls and Partitions	13.99
4.	Flues	.32
5.	Accessories	2.18
6.	Instruction	46.86

Segregation of Instruction

Instruction floor space was as follows:

	Per Cent
Physical Education (Gym.)	6.06
Shower and locker rooms	4.29
Auditorium and stage	8.00
Music	1.88
Science	5.25
Shops	1.68
Library	1.28
Instruction	18.42

Mission High School
Total floor area 271,943 sq. ft.

		Per Cent
1.	Stairs and Corridors	24.37
2.	Administration	12.48
3.	Walls and Partitions	10.38
4.	Flues	.57
5.	Accessories	1.16
6.	Instruction	51.04

Segregation of Instruction

	Per Cent
Physical Education (Gym.)	6.50
Showers and lockers	4.47
Music	2.47
Auditorium, etc. (Auditorium, Stages, Balcony)	5.07
Shops	6.50
Instruction	18.76
Science	5.67
Library	1.60
	51.04

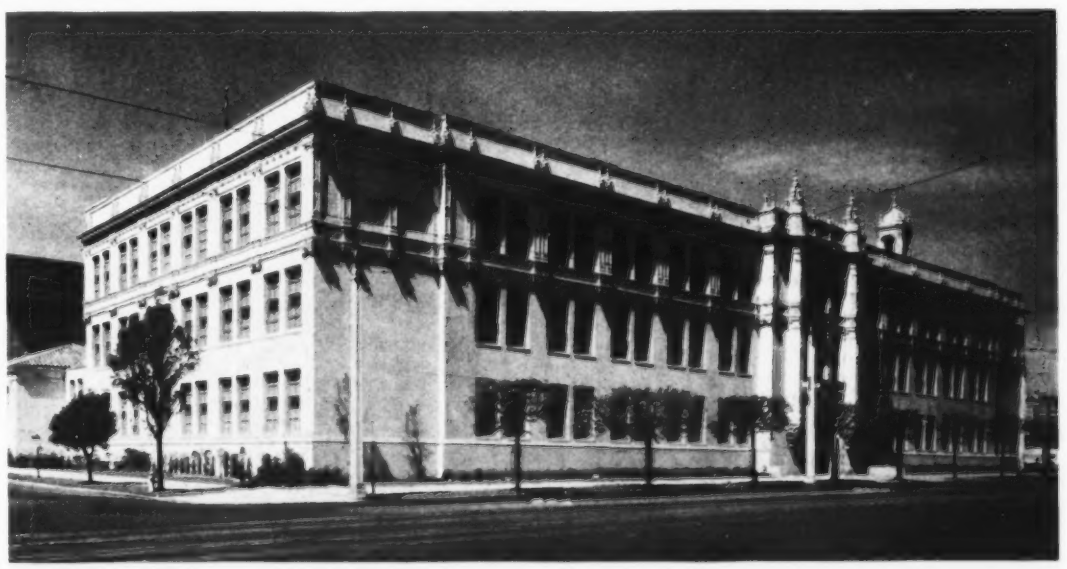
While 11 elementary schools have been completed in the past two years, the result of a policy that each building have its own plan, has led to a pleasing diversification of appearance. This has increased the cost of architects' services, but was partly made necessary by the fact that the school sites vary considerably in size, slope, and exposure so that no single standardized plan can fit all the problems to be met. However, details of individual classrooms have been standardized by the school department. Practically all the buildings have been finished in cement stucco, trimmed with cist cement or terra cotta, while a few are veneered with brick or terra cotta. Linoleum floors and built-in desks and cabinets are usually included in the original contracts and add to the cost of the buildings rather than the cost of equipment. Motion-picture booths and stage fittings have been added in this way.

The Lafayette Elementary School cost $386,000. It was built to accommodate 1,100 children. The enrollment in the fall of 1928 was 1,230. The per-pupil cost is, therefore, $350 on normal accommodation.

The costs given for the Mission High School, for the Everett Junior High School, and for the Lafayette school, does not include the cost of land. The reason for this is simply the injustice of such consideration. For instance, the land for the Mission High School cost $35,000 many years ago, but this is but a small fraction of the present value. The land recently purchased for the Everett Junior High School cost $442,000, as it was necessary to have 400 families vacate a congested flat area.

The Lafayette school conforms to the unit plan. It has 24 classrooms, two kindergarten rooms, a library, an auditorium seating 500, opportunity rooms, and workrooms.

(Concluded on Page 170)



HIGH SCHOOL OF COMMERCE, SAN FRANCISCO, CALIF.
John Reid, Architect, San Francisco, Calif.

The Restricted School-Building Program

F. C. Bonsack, A.I.A., St. Louis, Mo.

Much has been written about school buildings in the architectural and school press, and many outstanding examples of well-designed buildings have been published, but practically all the attention has been devoted to more expensive structures in the school districts where funds are plentiful and readily available. The purpose of this article is to answer some of the many questions which confront the members of the average school board when they come to consider the erection of a new school building. The same salient problems which confront the large city and the wealthy small town must be solved by the school board of every smaller community and consolidated school district, and while the basic standards for these smaller schools are the same as those for the more fortunate and wealthier districts, satisfactory solutions of the problem are far more difficult than where financial resources are not so limited.

When a school district requires additional space to properly carry on its schoolwork, the first step is to employ an architect. The second step is to make a survey of the existing conditions. Such a survey will develop the most necessary facts concerning the present and future growth in population, present and probable school enrollment, the character and probable life of the present school plant, the available sites, etc. By comparing these facts with the educational program of the superintendent and his associates and by considering the possibilities of future development, the members of the board can determine what the needs are, for an additional school building. The next step is to determine what building space will be needed to fit the program to the best advantage. With these data the architect can make preliminary sketches and can prepare an estimate of the probable cost of the building.

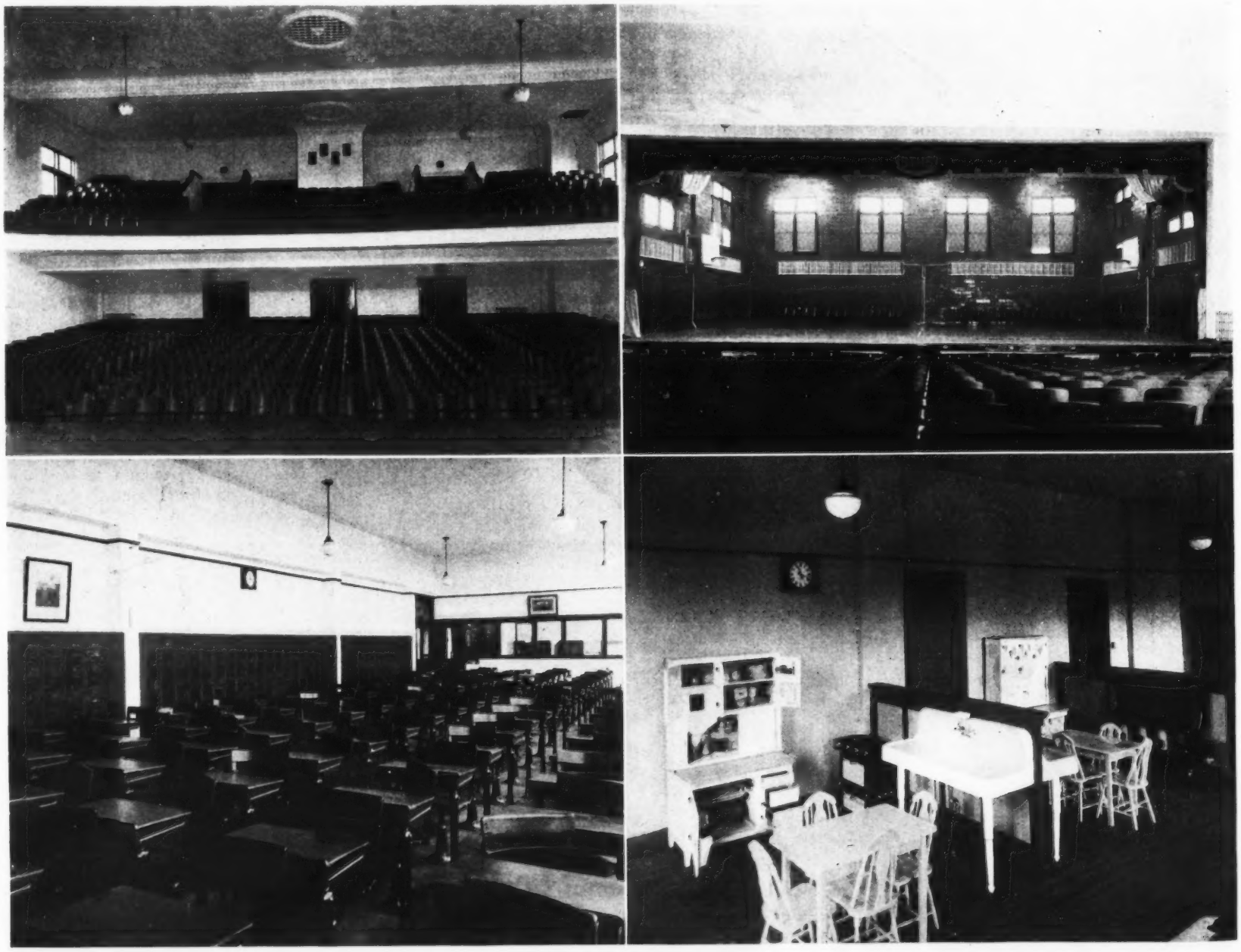
Adjusting the Program to the Funds

With the preliminary sketches and estimates in hand, the task of adjusting the building program to the obtainable funds must be undertaken. The logical procedure is to definitely determine the indispensable necessities and to add such wants as are most desirable. The entire project should be planned so that the building may be added to, or completed, when financial arrangements can be made, and when population or educational requirements demand. A definite program of present construction and future development should be carefully worked out in detail before submitting a bond issue to a vote, so that both the board and the taxpayers may be intelligently informed on the question. All this does not require working plans and specifications, but the board should have the definite assurance from an experienced architect who has carefully studied the entire situation, that the board will be able to complete a satisfactory building, equipped and ready for use, within the amount of the bond issue.

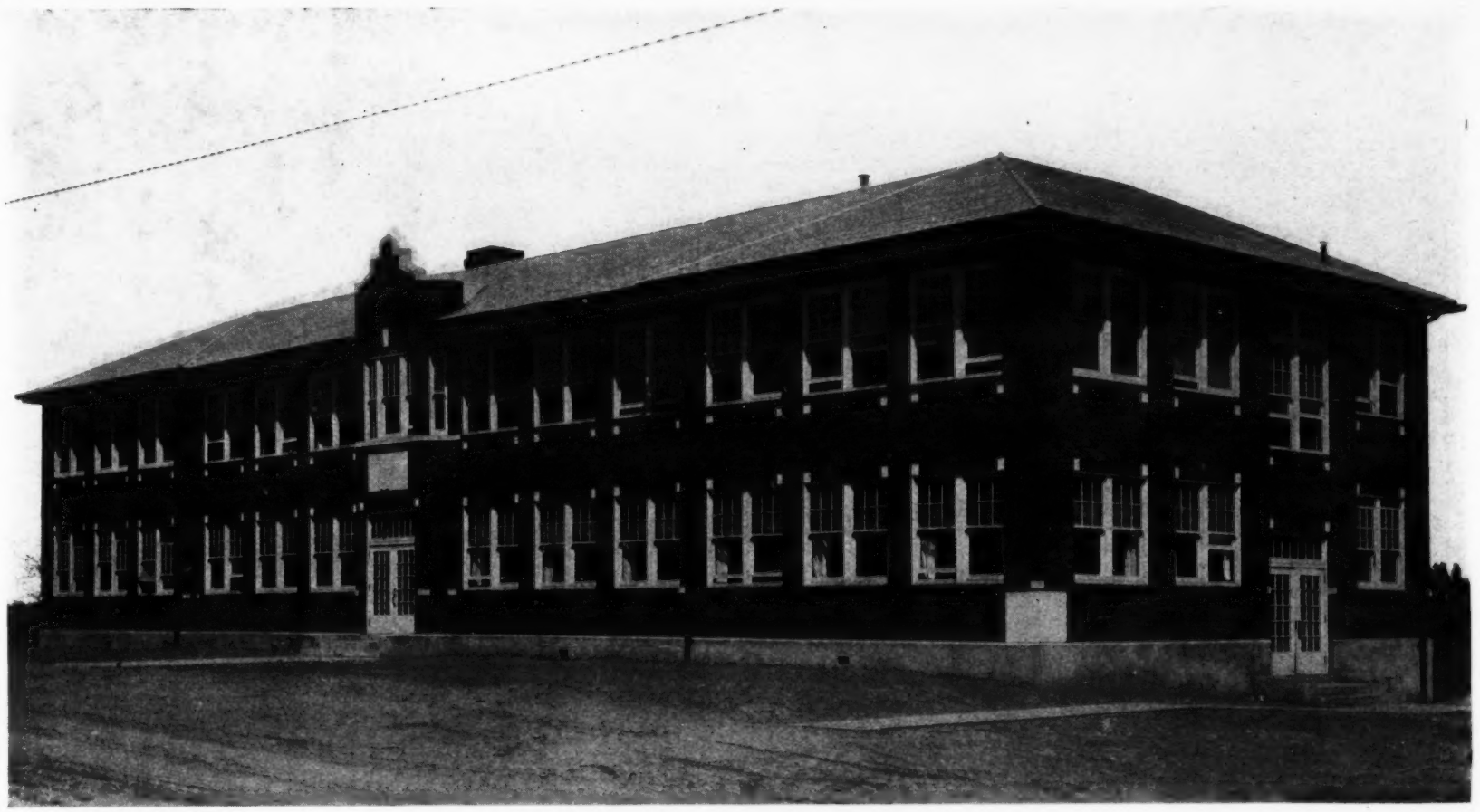
The old idea that any architect can properly design educational buildings has passed, and the present demand is for "school experts" who can solve the important problems of floor layouts and orientation, of lighting, heating, ventilation, fire and panic hazards, and sanitation. If these matters are considered, the members of the school will also understand how important are the architect's experience and a good past record of ability to obtain satisfactory results. They will limit their choice to a man who can show buildings of pleasing appearance, which are conveniently arranged to take care of the requirements, and erected at an economical cost within the funds available.

The expert service of an experienced school architect costs exactly as much as the service of any ordinary, reputable architect of questionable ability in schoolwork. The entire cost of good service is saved in the adequacy of plans and specifications, and in the assurance that there will be no mistakes and no doubtful experiments.

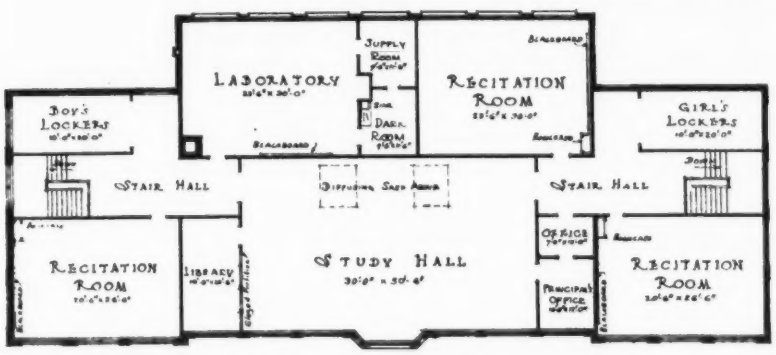
There is often the impression in the minds of school boards, that this type of competent architectural service is not available for smaller work, because architects are not interested, or



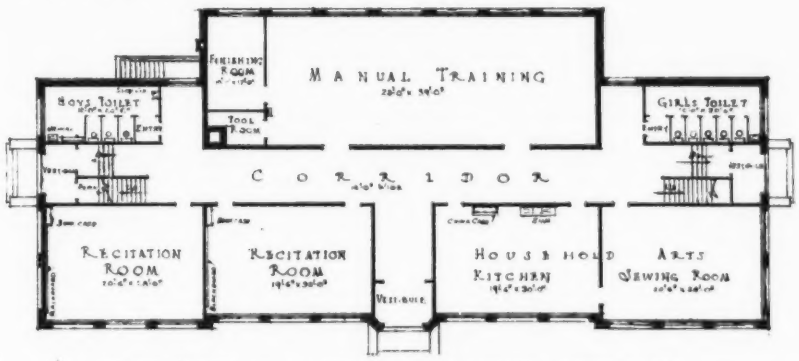
INTERIOR VIEWS OF THE HIGH SCHOOL, BONNE TERRE, MO.
Bonsack and Pearce, Architects, St. Louis, Mo.
UPPER: Auditorium Seating and Stage Gymnasium; LOWER: Study Hall and Cooking Room..



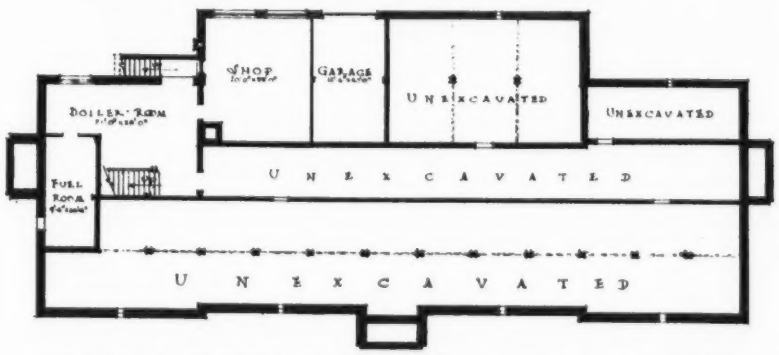
SENIOR HIGH SCHOOL, ESTHER, MO.
Bonsack and Pearce, Architects, St. Louis, Mo.



SECOND FLOOR PLAN, SENIOR HIGH SCHOOL, ESTHER, MO.



FIRST FLOOR PLAN, SENIOR HIGH SCHOOL, ESTHER, MO.



PLAN OF BASEMENT AND FOUNDATIONS, SENIOR HIGH SCHOOL, ESTHER, MO.
Bonsack and Pearce, Architects, St. Louis, Mo.



DOMESTIC SCIENCE DEPARTMENT, SENIOR HIGH SCHOOL, ESTHER, MO.

because they will make the building cost too much. A school architect can always be found who will give each school board the proper attention for a fair fee, and his experience will tend to reduce ultimate expense. In order to illustrate the points made, we offer three examples of high schools for which the firm of which the writer is senior member, rendered architectural services. In each case, the school boards made a contract for our services before the money was made available by a bond election. In each case sketches and estimates were made first, assuring the success of the project, so that a definite program could be completed when the taxpayers voted favorably on the program.

THE SHELBINA HIGH SCHOOL

At Shelbina, the members of the board of education and Superintendent W. E. Moore were anxious to improve conditions. After a preliminary meeting at which the local situation was thoroughly discussed, we entered into a contract for architectural services.

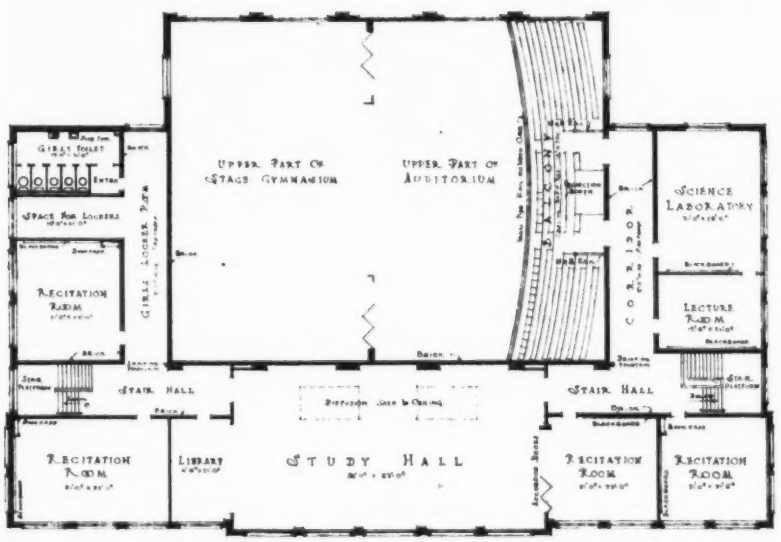
Approximately $80,000 was all the money that could be obtained. The old high school was in unsafe condition and crowded, and the grade school connected with it was in need of repairs and new toilet facilities. After considering the report of the state inspector, the requirements of the district, and the views of the board and superintendent, a number of schemes were submitted and the one selected was built after the funds were provided by means of a bond issue.

The requirements were as follows: A high-school building to care for a high school of 260 (with expansion features), to include a study hall and a library stack room; recitation rooms for academic subjects; a home-economics department for 20; a vocational agriculture room for 25; (shopwork in a separate building); a commercial department with 20 bookkeeping desks and 12 typewriters; a science laboratory and lecture room; a superintendent's office, boys'

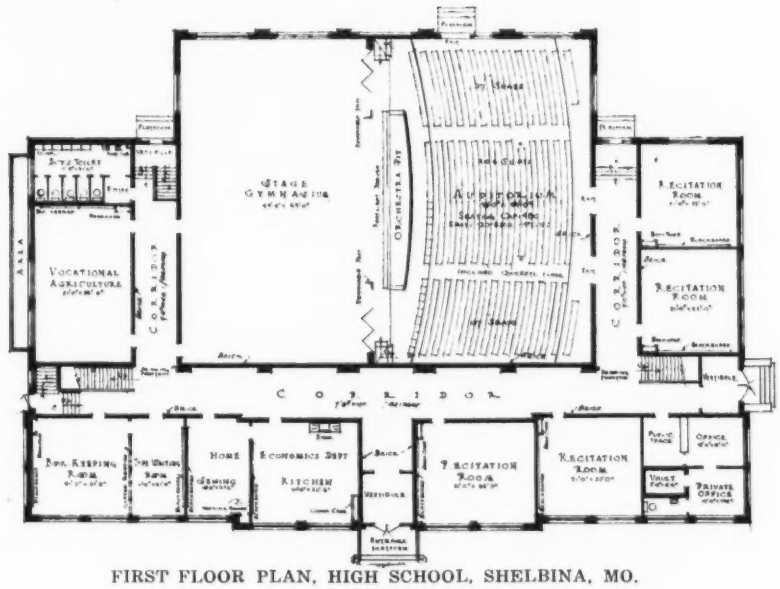
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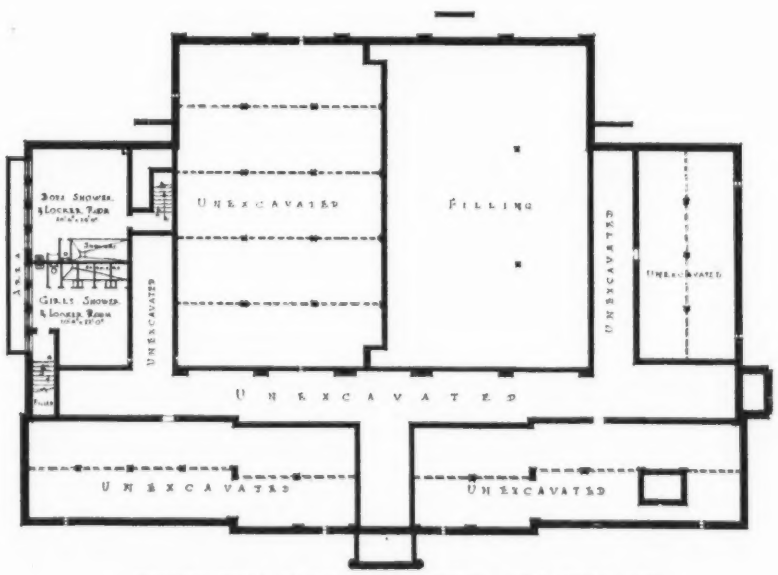
HIGH SCHOOL, SHELBINA, MO.
Bonsack and Pearce, Architects, St. Louis, Mo.



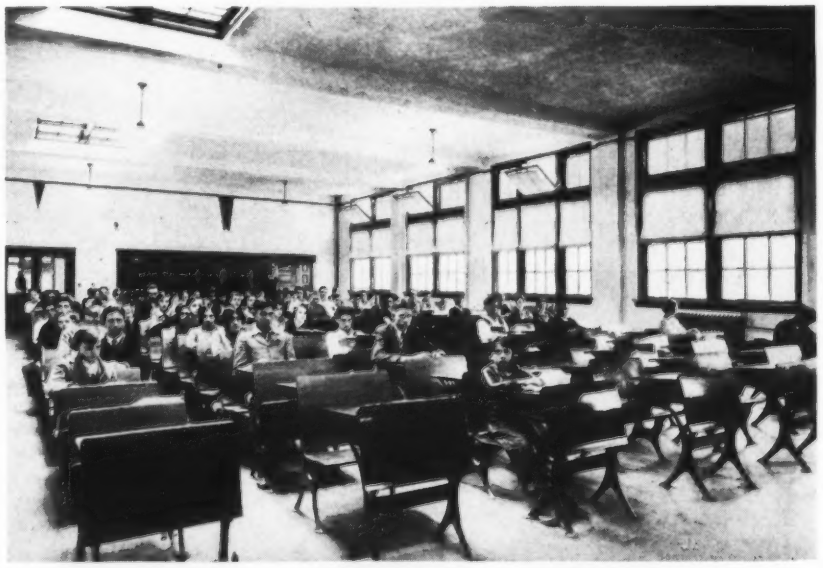
SECOND FLOOR PLAN, HIGH SCHOOL, SHELBINA, MO.
Bonsack and Pearce, Architects, St. Louis, Mo.



FIRST FLOOR PLAN, HIGH SCHOOL, SHELBINA, MO.



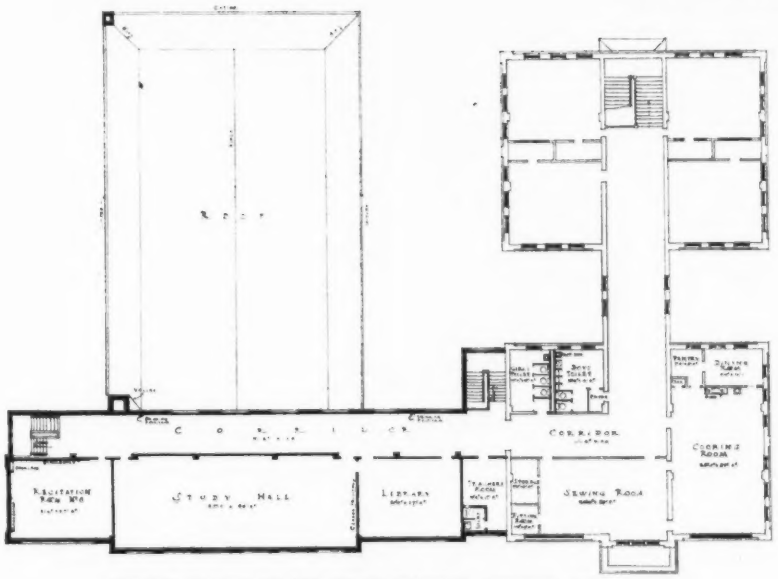
FOUNDATION PLAN, HIGH SCHOOL, SHELBINA, MO.
Bonsack and Pearce, Architects, St. Louis, Mo.



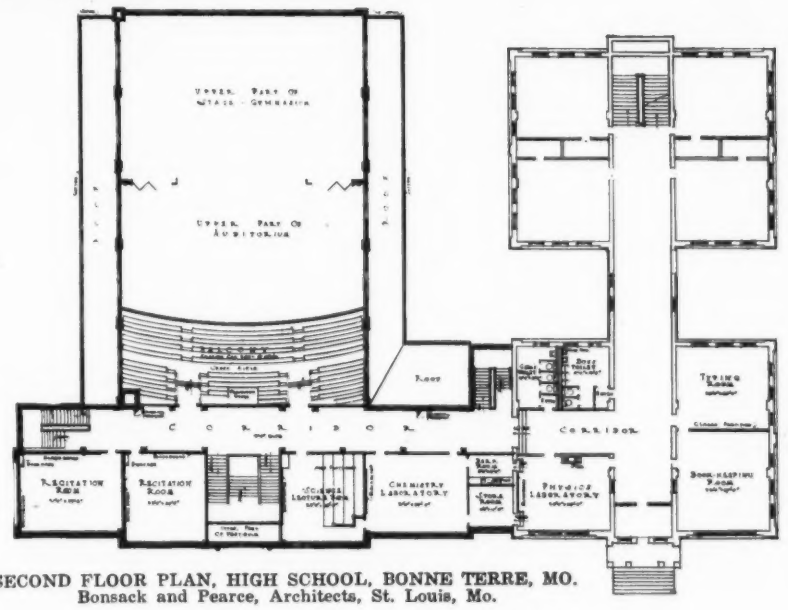
STUDY HALL, HIGH-SCHOOL BUILDING, SHELBINA, MO.



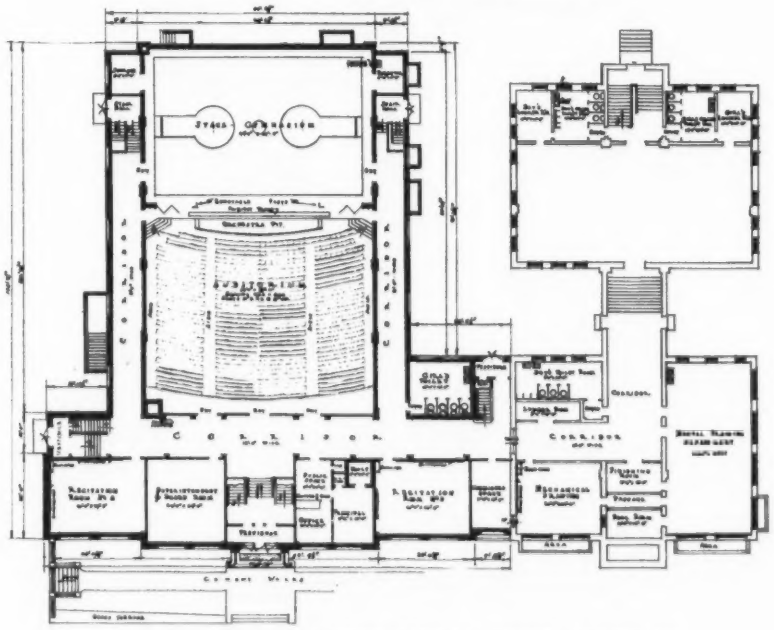
HIGH SCHOOL, BONNE TERRE, MO.
Bonsack and Pearce, Architects, St. Louis, Mo.



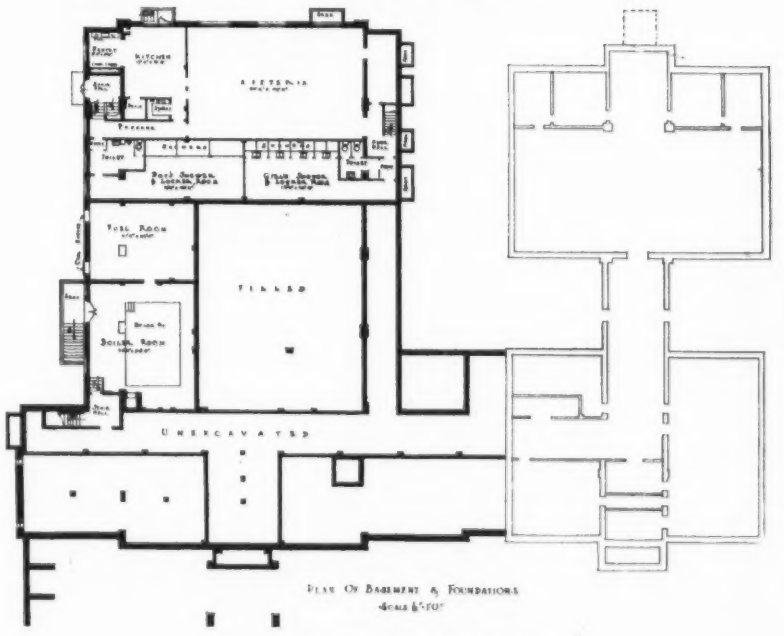
THIRD FLOOR PLAN, HIGH SCHOOL, BONNE TERRE, MO.
Bonsack and Pearce, Architects, St. Louis, Mo.



SECOND FLOOR PLAN, HIGH SCHOOL, BONNE TERRE, MO.
Bonsack and Pearce, Architects, St. Louis, Mo.



GROUND FLOOR PLAN, HIGH SCHOOL, BONNE TERRE, MO.
Bonsack and Pearce, Architects, St. Louis, Mo.



PLAN OF BASEMENT & FOUNDATIONS

HIGH SCHOOL, BONNE TERRE, MO.
Bonsack and Pearce, Architects, St. Louis, Mo.

THE AMERICAN
School Board Journal

WM. GEO. BRUCE
WM. C. BRUCE } EDITORS

EDITORIAL

THE TASK OF SELECTING SCHOOL SITES

There are few things in the field of school administration that require greater care and circumspection than the selection of a site for a new school structure. And no subject can raise greater controversy and friction in a community than the site question.

The trouble usually starts when rival real estate men lobby for their offerings, and the climax is reached when delegations of citizens interested in this or that section of the town storm the board of education demanding recognition.

During the past year some unpleasant situations have arisen. Important schoolhouse projects have been delayed pending the settling of a row concerning the selection of a site. The school authorities may know the most expedient location for the new school structure, but may not be in a position to get it. Land values take a jump when it becomes known that the school authorities are in the market for property.

And right here the expendiency of executive or secret school-board sessions have demonstrated their usefulness. Newspaper reporters and others may complain when school boards meet behind doors to discuss school problems, but the expediency of keeping the plans regarding the selection of a school site from public knowledge has proved a wise procedure.

Then there is the alert parent who wants a school within easy walking distance from his home. Johnnie and Mary must come home for their noon luncheon and must not walk too far. When the parents, who object to a given site, organize themselves into a delegation with a vigorous spokesman to lead off, then the trouble is on. The citizen-orator can make the fur fly and tell the school-board fellows just where to get off at.

A combination of circumstances may make the selection of a suitable school site extremely difficult. Certain sites may, from the standpoint of a present and prospective pupil constituency, trend of population growth and residential expansion, and cost considerations, prove more desirable than others. In other words, a board of education may be able to designate the ideal site and yet find that it is covered with costly improvements and, hence, not an advantageous bargain.

There is a practice in growing communities to apply timely anticipation in the selection of school sites by securing good-size tracts of land in outlying districts for future use. This policy has not only proved wise in affording ample school grounds when needed but also in saving considerable money.

The survey idea has done much toward the formulation of judicious building programs, and has enabled school authorities to estimate with reasonable accuracy the schoolhouse needs of five and ten years hence. While general rules applying to the selection of school sites may be laid down, it follows, nevertheless, that local conditions vary so radically that the judgment of those on the ground must finally prevail. And that means that in most instances the ideal site is found in an approximate sense only.

WHEN SHOULD THE SCHOOL SYSTEM HAVE A BUSINESS MANAGER?

That a school system spending a considerable sum of money in the course of the year should place its financial affairs into competent hands is no longer a subject of debate. Just when and where expert service, aside from the ordinary staff officers, should be employed, is not so clear. The volume of business transacted by local school systems varies with the size of the communities.

In the smaller communities the secretary of the board of education, the superintendent of schools, or a supply committee may make the purchases. In the medium-size communities, too, these officials in many instances attend to the business matters of the school system, while in the larger, a business manager or his equivalent is employed. As stated before, the question arises at what point the volume of financial transactions has become sufficiently large enough to warrant the employment of a regular business manager, or official by any other name, whose duty it will be to apply himself solely to the business side of the school system.

Mr. H. L. Mills, who is the business manager of the board of education of Huston, Tex., and incidentally identified with the National Association of Public-School Business Officials, says that "any school district in this country spending as much as fifty thousand dollars a year in its public schools should have a person in charge of its business affairs."

The United States Bureau of Education recently defined the status of the school-business-manager movement as follows:

"A business manager for city schools has found his place in 42 of the 55 cities in United States that have populations of more than 100,000 population, according to reports received by the Federal Bureau of Education. In 19 of these 42 cities, the business manager is responsible to the board of education through the superintendent of schools, and in 23 he is responsible directly to the board. In 23 cities, the business manager is appointed upon the recommendation of the superintendent. The supplies and equipment are purchased on the approval of the superintendent in 29 of the 42 cities.

"Eighty-four cities of 131 cities between 30,000 and 100,000 population, state that they employ a business manager, and in 42 of these cities, the offices of business manager and secretary of the board are combined. In 32 of the 84 cities, the business manager is responsible to the superintendent, in 32 to the board, and in 20 to the superintendent and board jointly. In 47 of the 84 cities, the business manager is appointed on the recommendation of the superintendent, and in 58 cities, supplies and equipment are purchased on the approval of the superintendent of schools. Unless the superintendent of schools has general direction of the ordering of textbooks, supplies, and the like, there may be delay, and the work of the school suffers, or possibly the wrong kind of supplies may be ordered if the business manager is independent of the superintendent."

In discussing the superintendent's relation to business detail Mr. Mills holds that: "The superintendent, if he is to be truly the educational leader of his school, must have his system upon a smoothly functioning financial plan. No superintendent can do his best work if he is forced to look after the details of purchasing and distributing of supplies, maintenance, and repairwork, as well as the innumerable other details that pertain to the business side of any large undertaking. It is not only unfair to the superintendent, but it is most costly to the school system and patently unjust to the pupils and to the taxpayers."

If the business manager has his starting point in a school system where the sum of fifty thousand dollars is annually expended, then the question arises whether he can make a sufficient saving on that volume of business to warrant his own salary.

The further question would be whether, on the whole, the schools would save any money by creating the office of business manager, purchasing agent or whatever he might be called. Much depends upon the talent already employed and the ability of those in charge to conserve the economies of school-administrative service.

Therefore, the question of when and where to employ a school business manager it would seem rests largely upon local conditions and circumstances, and finally upon the judgment of the board of education upon whom rests the responsibility of promoting the economy and efficiency of the school system.

WHAT OF SCHOOL ADMINISTRATION—RETROSPECTIVE OR PROSPECTIVE?

There comes a period in the year when the circumspect and efficient administrator takes an inventory of the things under his control, and at the same time weighs and measures the tendencies and conditions with which he must deal. In the light of these and through the lessons they unfold, he formulates his plans and policies with the thought that the work of tomorrow must be better than the work of yesterday.

At the very beginning of such a review the wise administrator knows exactly why the schools cost much more money than they did a decade ago, and stands ready to defend the increased expenditures. He knows also that with the constant changes in our economic and social life, new and enlarged tasks have been placed upon the schools. And finally, he knows that the educational forces have met in a progressive way the demands of a new day.

In brief, he is aware that the public exacts a widened service at the hands of the schools and is ready and willing to pay the cost; that the evolution in the field of commerce and industry prompted the advent of the vocational school, and that the general urge for cultural progress has brought the junior high school into being. Finally, local pride and patriotism have led to safer and better-equipped school buildings, and ordinary business sense has prompted a better-paid teaching staff.

In inventoring the status of school administration we come directly upon the real issue, namely, that of the school administrator. Is he efficient? Has he met the exigencies of his job? Has he sensed the educational requirements of his community? Are the schools rendering the service best suited to the needs of the community?

There are educators in this broad land who are inclined in their public utterances to dwell upon what is not, rather than upon what ought to be. Fortunately, there are larger numbers of those who deal in constructive criticism and who courageously point the way to a better method and a better day. These wield a beneficient influence upon the educational life of the nation.

A rational appraisal of the trend as well as the accomplishments in the field of school administration will lead to the comforting conclusion that satisfactory progress is being made. Moreover, that America's system of popular education is not only placed upon a sound basis, but that those intrusted with the administrative direction of the schools are fully equal to their task.

During the past two decades the school-administrative machinery has experienced some modifications and refinements. The scope and function of the several factors, and the interrelations that must guide them, have become more clarified and settled.

The relations between local school systems and other governmental factors have not in all instances reached a satisfactory footing. In some municipalities the city manager exercises an unwarranted censorship over school budgets. In the state of Indiana, city-school systems are afflicted with a state tax board that may veto any school-building project. In New England cities, the mayor still has the legal right to badger and heckle a school committee on its policies or on this or that item of expenditure. Further refinements in the administrative machinery are in order.

The American people are peculiarly alive to the part which the schools must necessarily play in the training for citizenship and the service they must render to the economic and civic as well as the cultural progress of the land. They will continue to support the system of education now established and hold themselves in readiness to pay the cost.

The citizen who scans the inventory on the present status of the American schools and the momentum exercised in the administrative factors will come to the comforting conclusion that all is well.

UNIFORMITY OF DRESS FOR GIRL PUPILS

The question of uniformity of dress for girls attending the high schools comes to surface periodically. With each season, the princes of fashion attract the feminine tastes with new designs in garments and with new materials. These find their way into the schools to both the delight and chagrin of the student body.

There is the unwise mother who dresses her child in silks and satins simply because she can afford to do so, and the equally unwise mother who does likewise but cannot afford the cost. The result is envy and rancor, and a blow at the democracy of the schools.

The dress uniformity is successfully carried out wherever parent sentiment supports it. This not only applies to the public schools but also to the select private schools. The wise mother does not want the child to secure false notions of preference or superiority. She knows that the spirit of equality must be observed in the schools and that the attitude thus fostered has its value in after life.

True, there are thousands of schools where either by choice or necessity the girls are dressed in neat and unostentatious garments, and where the question of a uniform garb has no force.

In discussing the subject, an editor recently asserted that the public schools are less inclined to strive toward simplicity in dress than the private schools. He says: "Many of the private and parochial schools insist upon an abandonment of ostentation in dress, in fact, a dress of uniform shape, color, and texture is prescribed. In the majority of instances the girls who attend such schools are from well-to-do families, hence the example they set by simple gowning is well worth considering by controlling boards of public schools open to the children of all—rich or poor."

The issue is not raised by public-school authorities until some glaring cases of inequality and embarrassment have come to light. The introduction of some uniformity encounters opposition where and when the schools have been opened and mother has set her mind upon the fineries that the daughter shall wear.

Where the system of uniform dress is once established, it is usually continued without friction. The parent that is informed of the rule before the fall opening of the schools abides by the same as a matter of course. Our attention was recently called to a large city high school in which hundreds of girls were enrolled and where uniform dress was prescribed without causing even a murmer of protest.

As already intimated, there are communities where the parents will of their own accord, or upon a caution by the school authorities, hold to simple garments for their children. Where the theory upon which the American school system is based, is properly understood, no difficulties are likely to ensue. But where perverse notions are entertained the school authorities are warranted in formulating definite rules and regulations on the subject.

THE SAVINGS OF TEACHERS AND FINANCIAL INVESTMENTS

It may seem to be wholly outside of the province of an educational magazine to concern itself with the hazards which attend the school workers of the country in the world of finance. Their dealings in financial matters, such as finding investment for their accumulated savings, are private and personal.

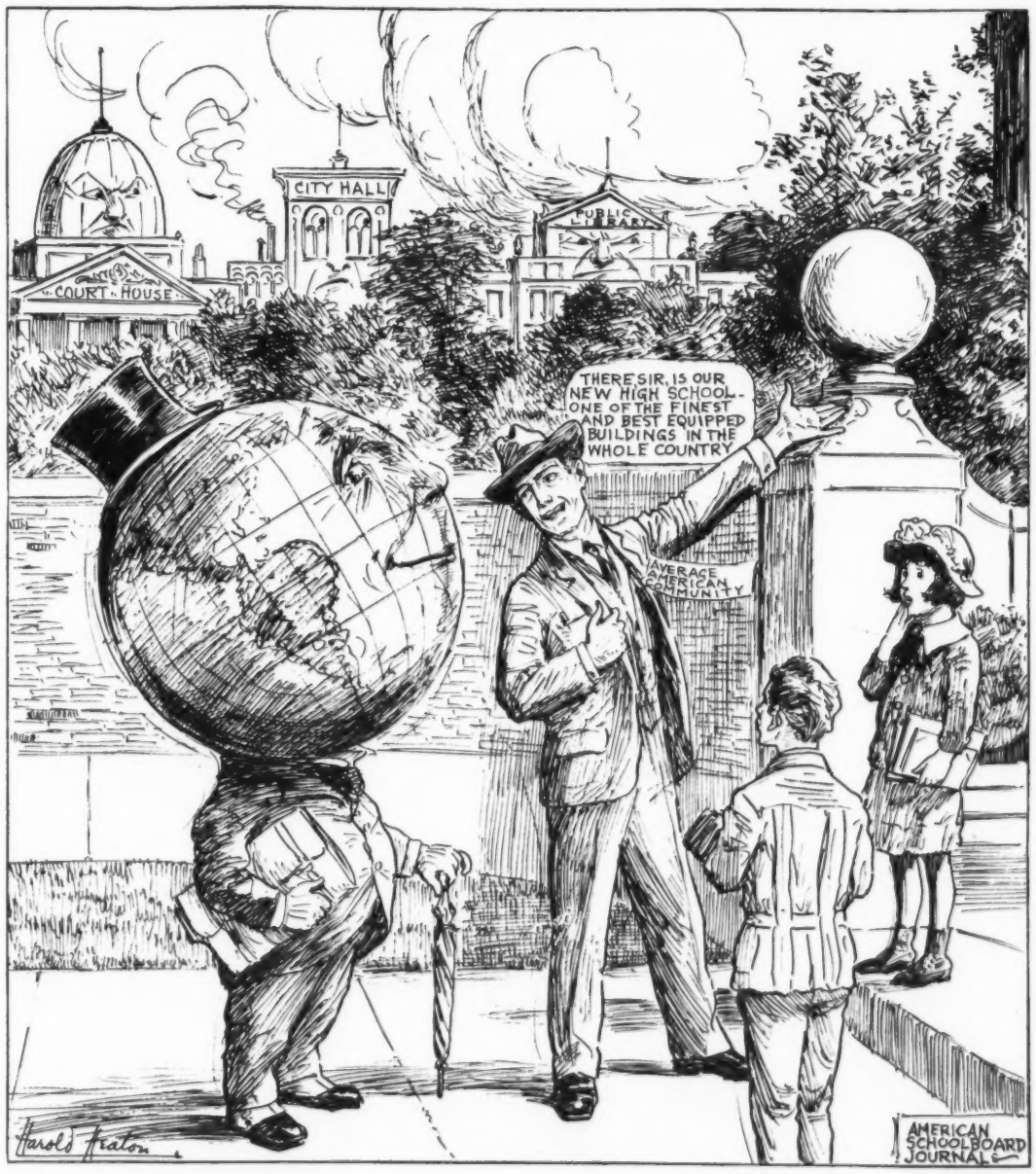
Then, too, there is the assumption that, since teachers are above the average in intelligence, they require less caution than does the average run of people, in placing money for investment. But, professional people are not always versed in matters of finance in the degree that business men are, nor is it expected that they should be. They are supposed to be conservative and circumspect, however, and free from the mania of speculation.

The news columns of the day ever so often report the exposures of some stock swindle in which among others the school teacher has become a victim. In Chicago, a stock broker was arrested recently for engaging in shady operations. The complainants were a group of teachers who had lost approximately $175,000. A school principal told the judge that he had lost $22,500, the life's savings of his wife and himself. According to the teachers, the broker canvassed school buildings, soliciting teachers between classes to buy bonds. Gilt-edge securities were sold and delivered. A few months later, witnesses testified, the brokers told the teachers their bonds had been recalled and would give them paper in exchange. The paper was said to be practically worthless.

This is not a new story. It has been heard before. Educators have become the victims of some of the most deplorable swindles on record. In each of these instances ordinary caution was not exercised. Usually it was a case of misplaced confidence and the violation of ordinary business rules.

We have known of school superintendents in the East who, during school hours, played the stock markets, and of teachers in the West who at all hours dabbled in oil stocks. These are speculative ventures which tend to make or break the investor. All is well when he sells out on a rising market, but there is woe and sorrow when the bottom drops out of the investment.

The schoolmaster belongs to that class of small investors who must place their earnings in nonspeculative, conservative, and reliable securities. Such securities can always be bought through reputable brokerage houses. The local banker, as a rule, knows the financial houses of standing, and he also knows what securities are safe and sound.



THE HIGH SCHOOL—OUR NEW LOCAL PRIDE!

Index of School-Bond Prices[1]

Harold F. Clark, Teachers College, Columbia University, New York, N. Y.

There has been a very slight decrease in school-bond interest rates. The net interest rate on all school bonds sold in November was 4.45 per cent. The net interest rate on all school bonds sold in October was 4.47 per cent. As the figures show, the net interest rate on bonds sold in November was .02 of 1 per cent lower than the rate in October. As was expected, the latter part of November showed some slight easing of money rates. However, the break in the stock market around the first of December with other influences led to the highest call-money rate since 1920. This in turn influenced bond interest rates and led to a tendency for bond interest rates to rise.

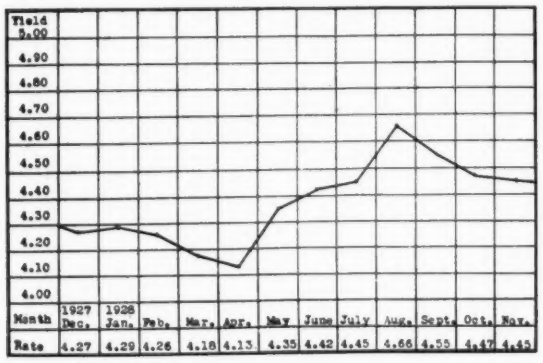


TABLE I. Average Yield of All School Bonds Sold During the Month

The final tabulation of the bonds sold during the latter half of December will doubtless show substantially higher interest rates than on bonds sold during the latter half of November. This brings up a very important point. The average interest rate on all bonds sold during two different months may be exactly equal and still there may be substantial variations of interest rates during the two months. It is perfectly possible that the average rate on bonds sold during December and January will be almost the same. This may be caused by lower interest rates in the first half of December, higher interest rates the last half of December, the first half of January, and lower rates in the last half of January. In selling bonds, schoolmen should watch variations within the month as well as variations from month to month.

TABLE II. Average Yield of All School Bonds Sold During the Month

TABLE II

Amounts and Yield of Bond Issues[2]

	November, 1928
1. School bonds sold during the month	$ 27,209,400
2. All municipal securities sold during the year (to date)	1,186,000,000
3. All school bonds outstanding (estimated)	3,257,000,000
4. Average yield of all school bonds outstanding (estimated)	4.64%
5. Yield of school bonds of ten large cities	4.19%
6. Yield of United States long-term bonds (Quotation the middle of December)	3.47%

[2]The monthly total of school bonds does not include all the bonds issued in the month, due to the difficulty of obtaining the yields on some of the issues.

Anything like accurate prediction of bond interest rates is unusually difficult at this time, due to the violent fluctuations and the demand for money in connection with the stock market. The general opinion seems to be that the earnings on bonds are out of line with the return on stocks and that it will lead to somewhat lower returns on bonds. This is simply another way of saying that school boards should be able to sell bonds at lower interest rates. There are good reasons for thinking that interest rates on bonds will tend to be somewhat lower after about the middle of January.

[1]Copyright by Harold F. Clark.

The lowest reported bond issue for November carried an interest rate of well over 4 per cent. The highest net interest rate reported was 6 per cent.

TABLE III

Year	Bond Sales[3] School	Municipal	All Public and Private
1927	$266,000,000[4]	$1,509,000,000[4]	$7,735,000,000[4]
1926	260,000,000	1,365,000,000	6,311,000,000
1925	323,000,000	1,399,000,000	6,223,000,000
1924	288,000,000	1,398,000,000	5,593,000,000
1923	208,000,000	1,063,000,000	4,303,000,000
1922	237,000,000	1,101,000,000	4,313,000,000
1921	215,000,000	1,208,000,000	3,576,000,000
1920	130,000,000	683,000,000	3,634,000,000
1919	103,000,000	691,000,000	3,588,000,000
1918	41,000,000	296,000,000	14,368,000,000
1917	60,000,000	451,000,000	9,984,000,000
1916	70,000,000	457,000,000	5,032,000,000
1915	81,000,000	498,000,000	5,275,000,000
1914	42,000,000	320,000,000	2,400,000,000

Average Rate at Which Bonds Were Sold

Year	Municipal
1927	4.47[4]
1926	4.61
1926	4.58
1924	4.26
1923	4.76
1922	4.81
1921	5.18
1920	5.12
1919	5.04
1918	4.90
1917	4.58
1916	4.18
1915	4.58
1914	4.38

[3]By special permission based upon sales reported by the Commercial and Financial Chronicle.
[4]Not final.

In one respect, the school bonds sold in November set a new record for the year; that is, in the total amount of school bonds sold in any one month. The total school bonds sold in November was $27,209,400. This compares with $21,193,500 in May, the largest month this year up to November. November, 1927, sales were $26,338,687. The large total in November, 1928, was due to a $21,000,000 issue of New York City. If this New York City issue is subtracted from the monthly total, the sales in the month are among the smallest for many months.

TABLE IV

Average Yield of Long-Term Federal-Government Bonds[5]

Past Twelve Months Month 1928	Rate %
December	3.53[6]
November	3.51[6]
October	3.55
September	3.54
August	3.56
July	3.50
June	3.40
May	3.35
April	3.32
March	3.30
February	3.36
January	3.35

Past Five Years Year	Rate %
1927	3.464
1926	3.544
1925	3.797
1924	4.010
1923	4.298
1922	4,301

[5]Taken from the Federal Reserve Bulletin.
[6]Calculated from the New York Stock Exchange quotations and not the final Federal Reserve Board average.

The $21,000,000 of New York City school bonds was part of a larger issue of 4¼-per-cent bonds which sold at 4.2002 per cent. According to reports, this is the highest rate paid by New York City since December 15, 1921, when 4½-per-cent corporate stock was sold on a 4.333-per-cent basis.

There were several bond issues offered during the month from which schoolmen could learn much. One of these issues was a $25,000,000 State of Kentucky bridge-bond issue. Due to the peculiar conditions under which the issue was offered, the bonds were not sold. The most damaging of these conditions was that the state reserved the right to deliver any or all of the bonds at any time. This condition, according to reports, "bankers regarded as making a deal practically impossible." The banking house would probably bid what it thought would be the highest net interest rate the bonds might reach during the period it might be asked to take them. Then, to be safe, the banking house would probably enter a bid with an interest rate higher than this to take care of any unusual situations that might send interest rates higher than they thought. The state was trying in a very crude way to arrange the situation so that it could get the money when it was needed. The fact that only one bid was submitted, and that for 5.50 per cent interest (which was rejected), when the bonds with proper conditions attached should have sold for about 4.25 per cent, should be a warning to school boards to be careful of the conditions under which they try to sell bonds. The state should have used short-term certificates to get money at the time it needed it and have issued the bonds at the time when they would have brought the highest price. Schoolmen should do the same thing.

TABLE V

Security Prices and Yields[7]

Date 1928	Average Price of 394 Stocks	Average Price of 60 Bonds	Average Yield on 60 High-Grade Bonds
	(1926 Average=100)		
Dec.	166.4[8]	97.8[8]	4.56[8]
Nov.	1.71[8]	97.9[8]	4.55[8]
Oct.	159.1	97.5	4.57
Sept.	156.6	97.5	4.57
Aug.	148.3	97.2	4.59
July	144.2	97.9	4.54
June	145.3	98.5	4.50
May	152.1	99.7	4.42
April	145.9	100.3	4.38
March	137.9	100.5	4.37
Feb.	132.3	100.3	4.38
Jan.	134.4	100.3	4.38

[7]As reported by the Standard Statistics Company, Inc. Used by special permission.
[8]Not final.

A PRELIMINARY SURVEY OF 1928

The year 1928 was an unusual year in regard to school bonds. Although final figures are not yet available, the total school-bond sales will be far under recent years. A good estimate for the sales in 1928 is about $200,000,000. This is about 75 per cent of the sales of last year. The sales for the past five years are:

1928	**$200,000,000 (estimated)**
1927	**266,000,000**
1926	**260,000,000**
1925	**323,000,000**
1924	**288,000,000**

The falling off in bond sales does not necessarily mean a permanent decrease in school building. It may indicate some slight tendency to pay for buildings as they are built. Even more, it is doubtless a reflection of a temporary rise in interest rates. To a certain extent it may indicate catching up with the school-building shortage caused by the war.

Interest rates during the year have shown the most decided fluctuations. School bonds started the year with an interest rate of 4.29 per cent in January, fell to 4.13 per cent in April, and rose to 4.66 per cent in August. Since August there has been a moderate decline in interest rates, but interest rates are still considerably higher than they were a year ago. The immediate future of interest rates depends somewhat upon the course of the stock market and upon the policy of the Federal Reserve Board. The longer time future may depend more upon the course of business and the supply of gold.

All things considered, the near future should lead to somewhat lower interest rates on bonds, and the long-term trend is likely to be down as well.

TABLE VI

Revised Index Number of Wholesale Prices[9]

Past Twelve Months Month 1928	All Commodities	Building Materials
Nov.	97.5[10]	95.1[10]
Dec.	97.6[10]	95.1[10]
Oct.	97.8	95.0
Sept.	100.1	94.7
Aug.	98.9	94.6
July	98.3	94.4
June	97.6	93.9
May	98.6	93.5
April	97.4	92.5
Mar.	96.0	91.0
Feb.	96.4	91.0
Jan.	96.3	90.8

Past Five Years Year	All Commodities	Building Materials
1927	95.4	93.3
1916	100.0	100.0
1925	103.5	101.7
1924	98.1	102.3
1923	100.6	108.7

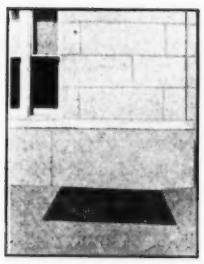
[9]United States Bureau of Labor Statistics, 1926=100.
[10]Not final.

According to press reports of December 6, the United States Treasury financing of December will consist of $500,000,000 of 4¼-per-cent certificates. This represents a decrease of ½ of 1 per cent in interest rate since the October financing. It indicates that the treasury thinks

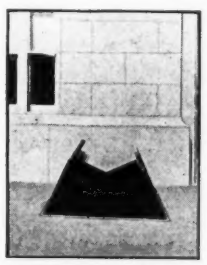
(Concluded on Page 174)

Ash Removal

Labor Saving, Safe, Speedy, *with*



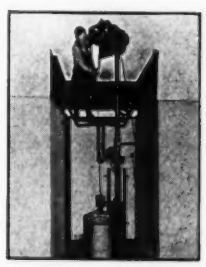
View with Watertight Doors Closed; Doors and Hinges Flush with Sidewalk



As Hoisting Head is Raised, Sidewalk Doors Automatically Open; Alarm Bell Rings



Hooking a G&G Standard Hoisting Can with Swing Bail After Operator Ascends Ladder



Hooking a G&G Standard Hoisting Can with Swing Bail (Inside View)



Raising Filled Can Without Leaving Sidewalk



Swinging Hoisting Head (on ball bearings) to Deposit Can on Sidewalk. Can Pushes Gate Open.



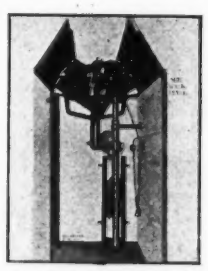
Can Deposited on Sidewalk without Lifting. Gate Automatically Closes.



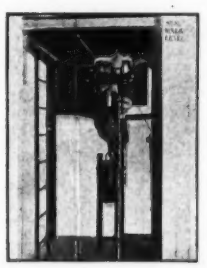
Two Filled Cans Raised Without Leaving Sidewalk



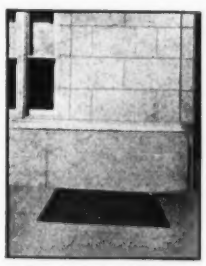
Lowering Empty Cans by Gravity



As Hoisting Head is Lowered, Doors Automatically Close; Bell Rings



Hoist in Area, Compact, Out of the Way. Doors Locked.



Closed and Automatically Locked Sidewalk Doors

1717 Schools use G&G Ash Removal Equipment

One of the most noteworthy improvements in school equipment is to be found in the removal of ashes. Not many years ago, ash removal presented a dirty, dangerous, time-taking job. Sidewalk openings were left unprotected, ashes were spilled over the pavement, and squads of four to six men and sometimes more were employed in the regular and necessary task of ash disposal.

Today, the modern schools are using modern methods for ash removal. G&G Ash Removal Equipment has contributed largely to this highly desirable change. Its sturdy construction and thrifty use of labor won the quick approval of school officials and architects. But above all, the greatest appeal was its assurance of safety in operation. Safety for the school pupil, because the sidewalk opening is always fully protected. Safety for the operator because the equipment is designed by engineers, thoroughly tested and its operation properly safeguarded.

It did not take school officials long to recognize the fact that with this equipment they could be free from all worries and annoyances and from damage claims.

Today, G&G Ash Removal Equipment is in use in schools in 43 states, in other words, practically every part of the country where coal-burning heating apparatus is found. For the smaller schools and smaller quantities of ashes, G&G hand-operated hoist equipment is available. For larger schools and larger quantities of ashes, G&G electrically-operated equipment is, of course, preferred.

With this equipment certain models require only one man for the entire job of removing ashes, and no model requires more than two men. Thus the labor of 3 or more men is saved and the work is performed more quickly, more quietly, and far more safely than with old-fashioned methods.

G&G Ash Removal Equipment is now standard equipment with the Boards of Education of many cities. In New York City alone, 172 schools are G&G equipped.

Complete details and illustrated catalog gladly furnished on request.

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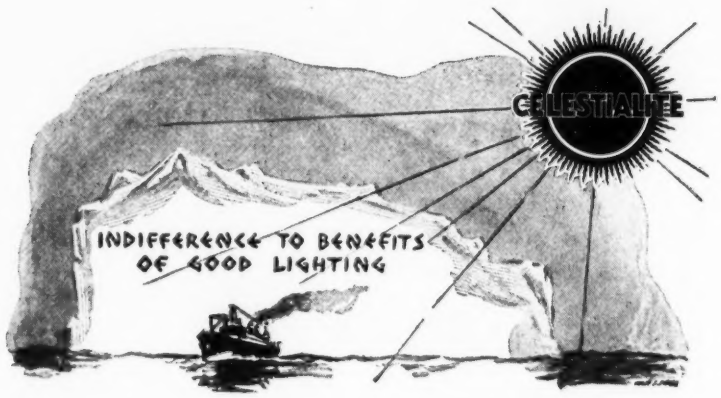
Telescopic Hoist

With Automatic Stop and Gravity Lowering Device

Also Popular in Other Fields

G&G Ash Removal Equipment is used in many different types of buildings. It is to be found in the U.S. Capitol and the U. S. Chamber of Commerce in Washington; Independence Hall, Philadelphia; Roosevelt's Birthplace and Holland Tunnel in New York, and many other buildings of national prominence.

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Three Layers

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3. An outer layer of crystal glass, provides body and strength.

THE soft but powerful rays of Celestialite, imitating as they do the light from the Sun itself, are fast melting general indifference to the benefits of good lighting.

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SEATTLE'S SCHOOL BOARD PRESIDENT DIES

Mr. E. Shorrock, member of the board of education of Seattle, Wash., died at his home in that city on November 16. At the time of his death he was the president of the board of education.

He was elected as school director in the fall of 1902 and was reelected every three years thereafter. He served four terms as president of the board, and was thus serving when called by death. As chairman of the finance committee he gave exceptional service in establishing and maintaining the affairs of the district on a sound financial basis. He was the first public officer in the state to suggest the serial-bond system, which ten years after our first serial issue, in 1909, was made mandatory by the legislature for all districts of the first class. Not only on the financial side but in every administrative capacity, Mr. Shorrock took an active interest and was untiring in his efforts to secure the best possible results for the schools. He gave years of service to the Textbook Commission, and served continually as director-trustee of the Teachers' Retirement Fund, conserving these funds as a sacred trust. He was a man of the most kindly instincts, patient and considerate, always ready to listen to plea or protest from the humblest citizen.

Mr. Shorrock gained prominence as a school administrator during the year owing to the fight which the Seattle board of education engaged in with the local teachers' federation. The board, after long deliberation, adopted a rule to the effect that any teacher in the service of the Seattle schools who joined a labor union automatically severed his or her connection with the school system.

President Shorrock stood in the center of this conflict and espoused the cause of the board of education with exceptional clearness and vigor. He was confident that the teacher who accepted employment under the board of education could not be entirely true to her professional calling and to the school child if she obligated herself to respond to the dictates of an outside organization. The controversy finally found its way into the highest court of the state with the result that the position taken by him and the Seattle board of education was legally sustained.

With the passing of Mr. Shorrock the city of Seattle not only loses a valuable school official, but one who has been of service to the rest of the nation in at least one important issue affecting the administration of the American schools.



E. SHORROCK
Late President of the Board of Education, Seattle, Wash.

THE ILLINOIS SCHOOL-BOARD CONVENTION

The fourteenth annual convention of the Illinois State School-Board Association was held November 21 and 22 at Urbana, Illinois, under the leadership of President L. J. Thiele of Glen Ellyn. The convention was welcomed by Hon. James Elmo Smith, president of the Urbana school board.

The several sessions were featured by a series of reports. The first of these dealt with rural-school organization discussed by A. M. Shelton. A legislative-committee report was presented by R. F. Locke of Glen Ellyn, who is the general counsel for the organization. Mr. Locke also reported on a constitution for the association. B. F. March made a report for the finance committee.

The fourth session was held jointly with the Superintendent's Association. J. W. McClintock of the Better-Schools League of Chicago was the principal speaker. The fifth session was in the nature of a dinner presided over by Supt. S. K. McDowell, of Bloomington.

The association adopted a new constitution in which the purposes are outlined in the following language:

a) To develop and maintain a mutual agency for the cooperation of school districts of the State of Illinois in the practical study of school problems.

b) To promote the application of the best methods in all branches of education by holding at least one convention annually for the discussion of problems in school policy and administration.

c) To gather and circulate information and experience on school activities and affairs.

d) To secure general school legislation which will be beneficial to the public schools, school

(Concluded on Page 94)

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ACTIVE in all building fields—BONDED FLOORS Company has, of course, many library installations to its credit.

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As long as this building stands—



The Original

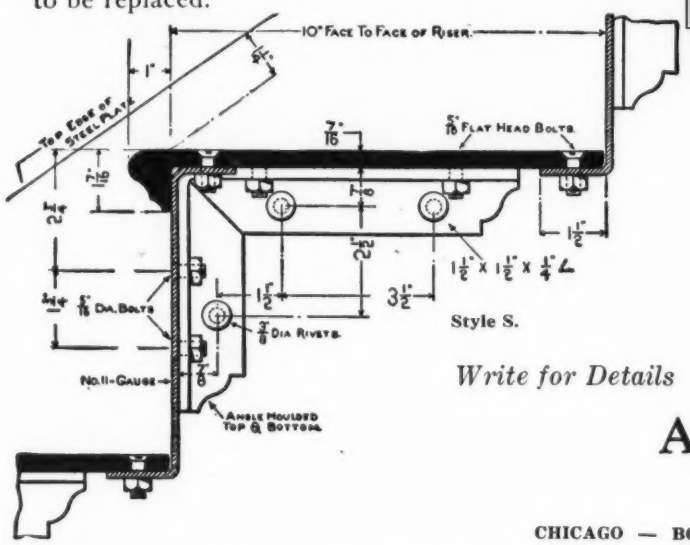
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Hurrying little feet—no thought of danger. You can't think for the children under your care, but you can end—once and for all—the greatest indoor hazard—Dangerous Stairways. Abrasive-Metal Anti-Slip Treads in the new building you are contemplating will outlive the building itself, or they may be easily installed on old stairways. Wherever and whenever they are installed in schools they are **never** required to be replaced.



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FERALUN is iron with abrasive grit incorporated in the wearing or tread surface when cast. The grit projecting slightly above the metal "bites" so that slipping on it is impossible. ALUMALUN has an aluminum alloy as a base, with the same abrasive.

These treads do not disintegrate or deteriorate when exposed, and are the most durable and effective treads on the market.

The Feralun Style "S" at the left is one specially designed for Schools. Over 20,000 have been installed in a single year, ample proof that architects and schoolmen are awake to the responsibility of providing safe stairways. Other styles for the repair of worn stairs of any type.

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(Concluded from Page 92)

children, and citizens of the state, and to oppose legislation injurious thereto.

e) To bring about the unification of all branches of public education in the State of Illinois—the elementary schools, the high schools, the normal schools, and the state university.

Resolutions

The resolutions adopted by the convention include the following:

1. Be it resolved that we recommend to the serious attention of the board members of this association the importance of using coal, building material, and other school supplies produced in our own state, and thereby contribute to some extent in relieving unemployment in coal mining and other centers, and thereby also keep Illinois money at work in Illinois.

2. Be it resolved that this association respectfully requests the board of trustees and the faculty of the University of Illinois to establish and maintain an extension course in business administration available to school-board members of the state, having for its aim the qualification of board members in the performance of their duties.

3. Be it resolved that the president of this association appoint a committee of three to make a study during the coming year of principles which should guide school officials and teachers in using material which public-utilities companies and various other organizations and agencies put before school children, so that the children may be protected from one-sided viewpoints and from exploitation for commercial advertising purposes.

4. Be it resolved that this organization make application to become a member of the Illinois Joint Tax Conference and the secretary of this association be instructed to make application for such membership in order that our association may unite our efforts with the other member organizations in recommending legislation to the Fifty-sixth General Assembly.

5. Whereas, the county superintendent of schools of Cook county, Illinois, elected by the people of the whole county, of which Chicago is a part, after being elected, has no jurisdiction or control over schools in the city of Chicago but only over the outside territory; and there may be other localities under similar conditions.

Now, therefore, be it resolved that this convention instruct its legislative committee and legal department to take such action as may be possible under the law to remedy this situation so that the people served by the county superintendents of schools may elect one of their own choice.

The principal discussions at the convention centered around the problems of reorganization of the rural school districts, with a view to eliminating waste in the use of public funds for educational purposes and for equalizing educational opportunity throughout Illinois.

The discussion brought out the fact that many school districts in southern Illinois, because of low assessed valuation, are unable to provide a medium of school facilities, while some of the richer districts in northern Illinois are unable to provide superior educational facilities which they are willing to pay for, due to tax rate and bonding-power limitations. It will be the aim of the association to point out these considerations to the Fifty-sixth General Assembly with a view to providing legislation which will meet the needs of varying conditions throughout the state with a view to equalizing educational opportunity. A larger state distributive fund for the benefit of districts in southern Illinois, and the removal of present tax rate bonding-power limitations for the districts in northern Illinois are particularly desired.

It was felt by the convention that the local school-board officials of Illinois are conducting an industry with an annual expenditure of nearly two hundred million dollars and it is very important to the taxpayers, voters, and school children of Illinois that local school problems of the state be intelligently and fairly dealt with by the Fifty-sixth General Assembly. The new officers of the Association are as follows:

President—W. C. Urban, president of the Granite City Community High-School Board, District No. 149, Granite City.

Vice-President—Bryant B. Voris, member of the Waterloo School Board, District No. 23, Waterloo.

Treasurer—F. E. Williamson, member of the Urbana School Board, District No. 116, Urbana.

Executive Committee Members—Geo. C. Bartells, member of the Collinsville School Board, District No. 89, Collinsville; L. R. Boyer, president of the Forest Park School Board, District No. 91, Forest Park; R. F. Locke, general counsel, Glen Ellyn; A. D. McLarty, general secretary, Urbana.

SCHOOL FINANCE AND TAXATION

BOILED DOWN TO THE LOWEST TERMS

The school administration of the village of Shaker Heights, near Cleveland, Ohio, publishes a monthly house organ for the parents and taxpayers. The September issue presented a school budget in a way that makes it entirely understandable, and indicates in irreducible terms, what money the board needs for conducting the schools in 1929, and how the funds for the purpose will be derived. The statement is as follows:

Budget for 1929 as Tentatively Approved

Teacher Salaries	$ 425,000.00
Bonds and Interest	415,124.00
Operation Salaries	81,000.00
Operation, Miscellaneous Costs	82,650.00
Maintenance of Buildings	30,000.00
Pupil Transportation	8,000.00
Health and Special Services	13,500.00
Special Assessment Taxes	15,000.00
Teacher Retirement	12,000.00
New Classroom Equipment	10,000.00
Materials for Resale	19,500.00
Landscaping Lomond School	5,000.00
	$1,116,874.00

Income to meet the above budget is anticipated as follows:

Balance in Current Funds, Jan. 1, 1929	$ 10,000.00
Resale of Materials	20,000.00
Depository Interest	10,000.00
County School Tax	291,500.00
Local School Tax	785,374.00
	$1,116,874.00

WISCONSIN'S NEW SCHOOL-SUPPORT PLAN

Beginning with the year 1929, the State of Wisconsin will distribute $6,000,000 under a new equalization plan to the several school units of the state. This is $2,200,000 more than was ever apportioned before.

In spite of the increased amount to be given counties and localities, the industrial sections of the state will receive decidedly less than they ever received before, while the poorer sections, particularly in the north, will obtain additional

(Continued on Page 96)



Superior Design

Roddis Flush Doors, so universally adopted for school buildings, are composed of five layers of solid wood: the softwood core, two hardwood crossband veneers and two hardwood surface veneers — as illustrated here. Roddis Flush Doors are more complete than other flush type doors because they have a protecting hardwood strip on *all four* edges as standard construction instead of only the two side edges.



Picturing: Sodus High School, Sodus, New York. Equipped with Roddis Flush Doors. Max Umbrecht, Syracuse, *Arch.*

Solid Construction

All parts are cemented together by a Roddis-prepared thoroughly water-proof glue: producing a permanency of value and service unequalled by any other door; also being truly sound-proof and fire-resisting. Write now for the special literature "Roddis Flush Doors for School Buildings" — and acquaint yourself fully with all these superiorities of Roddis Flush Doors and their beauty.

RODDIS FLUSH DOORS

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Manufacturer Of
Flush, French, Panel & Custom Built Doors
for more than a quarter century

AWNING TYPE WINDOWS EXCEL FOR SCHOOLS



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DONOVAN UNIVERSAL AWNING TYPE WINDOWS

are hygienically correct. Specially adaptable for the modern needs of school buildings. Recommended and in wide use to meet lighting and ventilating requirements. Sturdy, attractive and economical.

Complete information sent on request

UNIVERSAL WINDOW COMPANY

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(Continued from Page 94)

sums that will help them to support their local educational systems. As a general rule, cities will get less school aid from the state, but in the northern counties such loss will be greatly offset by the amount the counties will be paid.

The amounts that the various counties and cities will get, compared to what they received before, are being worked out by the state superintendent of schools. How some counties gain and other lose under the new law is shown by the following table:

COUNTIES—	Received	To receive
Ashland	$ 33,888	$ 69,388
Dane	128,092	152,116
Douglas	67,104	122,332
Fond du Lac	76,221	98,977
Green	28 463	49,765
Kenosha	79,868	83,889
La Crosse	62,691	59,812
Lincoln	32,344	64,849
Manitowoc	78,003	61,924
Milwaukee	827,362	520,753
Ozaukee	23,428	23,704
Racine	107,954	95,721
Sheboygan	94,089	81,015
Wood	55,541	72,322

How It Affects Cities

CITIES—	Received	To receive
Ashland	$ 15 844	$ 13,498
Fond du Lac	31,213	32,750
Kenosha	60,667	60,500
La Crosse	42,103	26,250
Madison	57,604	57,500
Marshfield	11,506	8,250
Merrill	11,180	8,500
Milwaukee	667,642	381,750
Monroe	5,284	5,500
Oshkosh	46 182	30,750
Plymouth	4,369	3,750
Racine	76,357	62,500
Sheboygan	51,264	34,750
Stoughton	5,007	7,280
Tomahawk	4,813	8,492
Superior	49,834	45,250
Viroqua	3,264	5,684
Wisconsin Rapids	11,246	7,250

The new school law passed because northern districts claimed they were suffering so severely under their educational burdens that it would be necessary to close some of the schools if special state aid were not granted.

FINANCE AND TAXATION

—The Chicago newspapers recently printed an item to the effect that the city schools face a deficit of approximately $12,000,000 caused by financial troubles inherited from previous administrations, coupled with a tremendous loss in revenue this year from uncollectible taxes.

It is believed that some legal means of maintaining the current expenses of the schools must be found, until more tax money becomes available about February 15. Private funds from public-spirited citizens will be solicited if necessary.

In 1927, Mayor Thompson sought an increase in the city's educational funds from the state legislature, but his plan of transferring 40 per cent of the building fund to the educational fund did not prove successful.

—Youngstown, Ohio. The county auditor has advanced $40,000 to the board of education to assist the schools in paying outstanding bills. The advance is 45 per cent of the city's portion of the delinquent taxes collected, to which the schools are entitled.

—The school board of Alton, Ill., is faced with the problem of securing additional revenue to meet the growing needs of the school district. It is proposed that additional funds be provided through an increase in the school-tax rate.

—Increased demands for state school aid and a corresponding decrease in funds available for such purposes has brought about a condition in Indiana schools whereby a number of the school units, particularly those in the townships, are practically in a state of bankruptcy, according to Mr. Harry Kirk, relief-fund auditor in the office of Roy P. Wisehart, state superintendent of public instruction.

In the opinion of Mr. Kirk, the situation is so serious that remedial legislation may be the only means through which the plight of approximately 125 school corporations may be overcome. Were it not for the fact that these school units are supported by public revenue many would have been declared bankrupt months ago.

About 125 school corporations are in a serious condition. Some of these have not paid their teachers for two years; others will have no money to pay them for this year until the December disbursements of state aid. The condition is due to the fact that the state relief is insufficient to meet the deficits.

—Leominster, Mass. Supt. Wm. H. Perry has asked for an additional appropriation of $4,500 to carry the school system through the fiscal year. In his financial report, Superintendent Perry showed that the budget appropriation was $5,000 less than the amount actually required, since the original budget had been reduced by the city officials.

—Lower school taxes will prevail this year in the Pike's Peak region of Colorado. The levies of the Manitou and Monument school districts are lower, and there is a reduction of one-hundredth of a mill in the general school-tax levy of Cheyenne county. The Manitou school-tax levy this year is 10.2 mills, as against 10.8 mills last year. The Monument tax levy is 14.6 mills, as against 15.6 mills last year. The Cheyenne levy this year is 11.9 mills, as compared to 10.4 mills.

—Milwaukee, Wis. The school board has approved a recommendation of the finance committee to the common council asking that the tax levy for school purposes be reduced by $240,000. The amount represents the money received from the state in excess of the sum which had been anticipated.

—Greeley, Colo. The school board has adopted a budget calling for a millage increase from 15.5 to 17.46.

—Willoughby, Ohio. The failure of the voters to approve a tax levy of $120,000 at the November election has made it necessary for the school board to curtail the operating expenses of the schools. The schools have fallen short nearly $10,000 of what they had expected to secure for the next year's expenses.

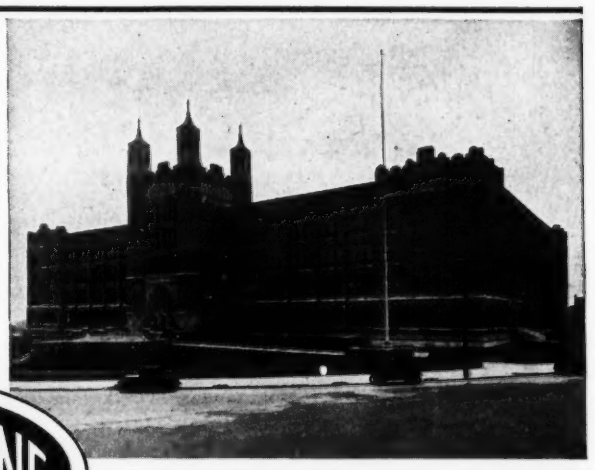
—Salem, Oreg. The school board has adopted a budget calling for an expenditure of $397,082 for the school year 1928-29, which is $22,085 more than for the school year 1927-28.

—Youngstown, Ohio. The school board has asked the county auditor to advance $40,000 to the schools from the general delinquent taxes collected by the city. The request was made after it was learned that the schools are entitled to an advance on this money in the face of a shortage of $74,000 in the school budget.

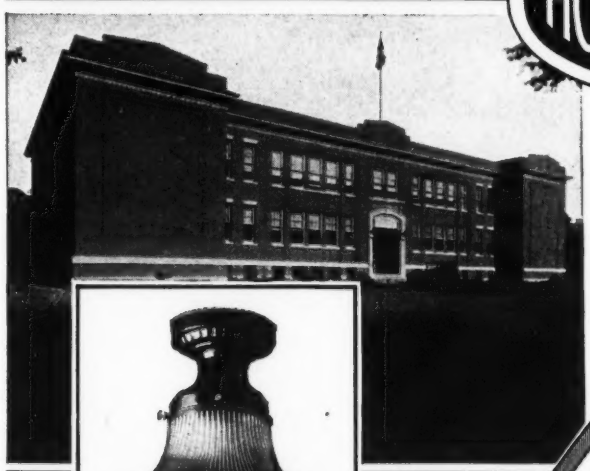
—Appleton, Wis. A tax levy of $365,000 for the schools has been approved by the board of education. The budget for the school year was fixed at $434,821. Last year, the tax levy was $350,000 and the budget was $418,000. More than half of the entire budget, or $277,670, will be expended for teachers' salaries this year. In 1927-28, teachers' salaries amounted to $271,575, indicating an increase of $6,100 for this item. The cost of heating twelve schools will reach $18,500, and improvements and repairs to schools will amount to $43,705.

(Concluded on Page 99)





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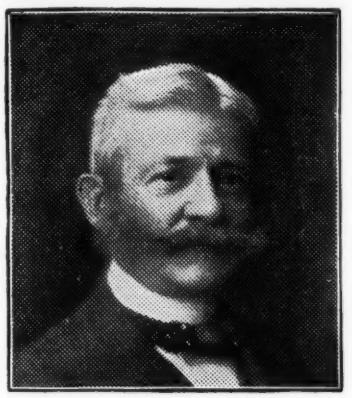
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(Concluded from Page 96)

—Boulder, Colo. Six school districts have asked the board of county commissioners of Boulder county for increases in the mill levy for the coming year. District 44 has asked for an increase in the mill levy from 2 to 3 mills, to increase the taxes for schools from $243.23 to $361.22. District 12 has asked for an increase from 3.6 mills to 5 mills, to increase the taxes for schools from $513.07 to $684.96. District 25 has asked for an increase from 1 mill to 2.5 mills, to increase the income from $173.67 to $442.35. District 10 has asked for an increase from 3.79 mills to 5 mills, to increase the income to $1,570. District 63 has asked an increase from 2 mills to 5 mills, to increase the income to $1,951.76. District 23 has asked an increase from 3.5 mills to 5 mills to increase the income to $2,733.09.

—Mineral City, Ohio. The voters have recently approved a three-mill school-tax levy for maintenance expenses of the schools.

—The citizens of Dayton, Ohio, on November 6, approved the two school-tax levies. The success of the campaign has been attributed to the united efforts of the coordinated budget committee, the citizens' school committee, the parent-teacher association, and the local press.

—The school board at Beaver Dam, Wis., has asked the city council for permission to issue a certificate of indebtedness in the sum of $13,000, the proceeds to be used by the school and to make up a 20-per-cent reduction in last year's school budget.

—The school board of Madison, Wis., has prepared a budget for the school year 1928-29, providing for an expenditure of $1,166,695 for the next year. The budget represents an increase of $68,300 over that of last year.

—Litchfield, Minn. The school board has fixed the school levy at $46,000, as compared with $43,000 for last year.

—Pittsburgh, Pa. The school board has taken steps to reduce the estimated expenditures for 1928-29, which show an increase of $674,000 over the 1928 estimates.

—Boston, Mass. Business Manager Alexander Sullivan, in his monthly report to the school board, shows that the total expenditures for the first ten months for all school purposes amounted to $15,998,227. The maintenance items total $11,845,950, expenditures for alterations and repairs to buildings amounted to $1,223,109, and expenditures for lands, plans, and construction of buildings for the period were $2,929,167.

—Murphysboro, Ill. Proposals seeking to increase the school tax were defeated at the recent election. The board has taken steps to meet a threatened deficit in funds. It is planned to keep the schools in operation as long as the funds are available.

—The school board at Bedford, Ohio, is threatened with a deficit of $39,000 due to the failure of the citizens to pay their taxes. The present situation arises from the fact that the budget was made out a year ago and accepted by the auditor on the basis of the total valuation of the school district during the year 1928, and the rate levied was deemed sufficient to raise the budget. The board plans to take steps for the collection of the delinquent taxes but it is possible the school employees will have to wait for their salaries until after January 1.

—Canton, Ohio. The school board has suffered a reduction of $217,000 in its school budget through a new apportionment of funds by the county budget commission. The school board had asked for $1,905,000 and was given $1,688,000, which is a decrease of $217,000.

—Salineville, Ohio. At the school election held on November 9, the voters approved a 1-mill additional levy by a substantial majority. The funds derived from the levy will be devoted to school purposes and to improvements on the school buildings.

—The estimated budget for the Seattle schools for 1928-29 totals $5,650,900. For 1927-28 the total was $5,376,679. The estimated current expense for 1928-29, as provided in the budget, is as follows: General control, $189,686; instruction purposes, $4,452,199; operation expenses, $595,587; maintenance expenses, $198,823; property improvements, $50,300; miscellaneous expenses, $83,655.

—The circuit court of Montgomery county, Ind., has rendered a decision against the Indianapolis school board in the suit brought against the state tax board by the Indianapolis school authorities. The decision gave the state a victory in the suit which was brought to test the authority of the tax board in the matter of school-building improvements.

The case resulted from the failure of the tax board to act promptly on a proposed $600,000 bond issue for improvements to the Indianapolis schools.

—Wilkes-Barre, Pa. The school board, through its attorney, has prepared a reply, which will be presented as an answer to the allegations of extravagance by members of the taxpayers' association.

—Pasadena, Calif. A dozen parents of high-school and junior-college students expelled for membership in illegal fraternities have appeared before the school board asking that the school officials reconsider their decision to place the students in a special class during the remainder of the term. Of the 30 or more students found as members of fraternities, 27 gave written statements to show that they had complied with the law governing secret societies. The expelling action of the board makes it apparent that the dismissed students will not be readmitted to the regular classes.

—A total of 7,100 school districts in Minnesota have been given state aid amounting to $6,294,975. Of the total amount, St. Louis county received the largest payment, $600,184; Hennepin county was second, with $398,631; and Itasca county third, with $215,435.

—Chicopee, Mass. At a recent meeting of the school and municipal departments, it was revealed that the school treasury was almost drained and that the school board was short $21,844. Acting upon a recommendation of the mayor, the city board of aldermen voted to advance $10,000 from the city-lighting account to bolster the school finances. It was brought out that the school department had originally asked for $574,942, but the mayor had reduced the figure in the budget to approximately $536,000.

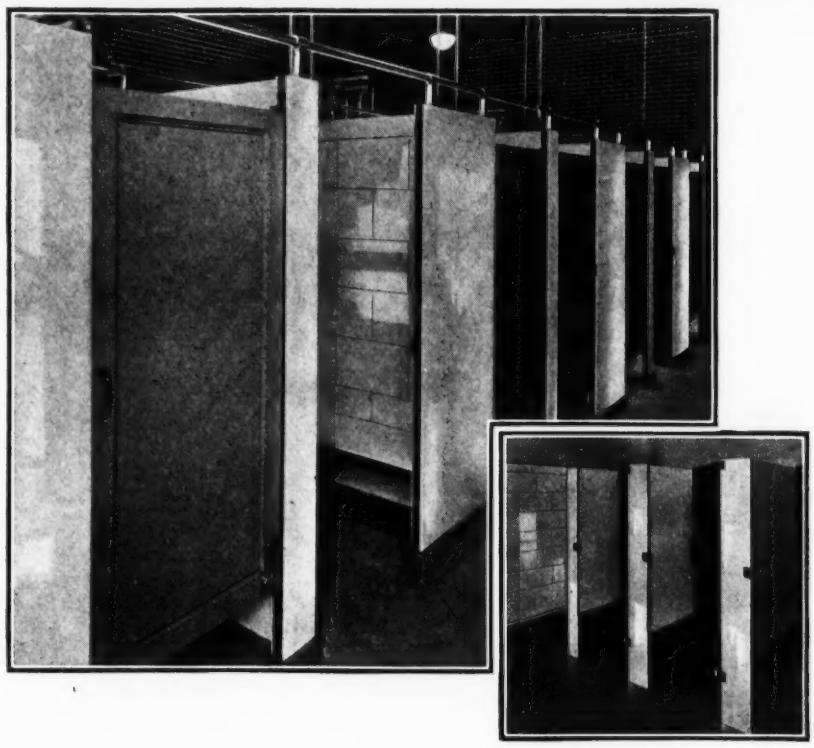
—Cleveland, Ohio. The special tax levy of 1 mill for a period of five years was approved by the voters of the city at the election on November 6. The special tax levy was made necessary by reason of the fact that the county auditor had reduced by $100,000 the value of property for taxation. It is the purpose of the school board to use only as much of the tax money as is necessary to meet the deficit which the lower valuation has brought about.

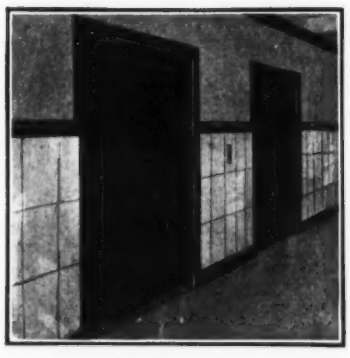
Practical Beauty

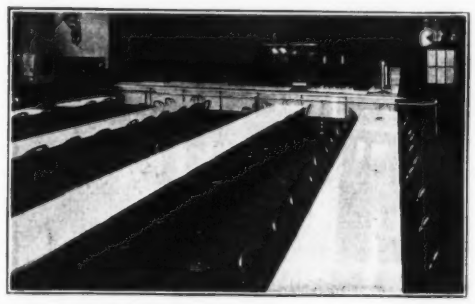
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SCHOOL LAW

SUPREME COURT THROWS OUT CASE

The United States Supreme Court was asked to determine upon the constitutionality of the continuation-school law of New York state, which compels the full- or part-time attendance of pupils between the age of 14 and 18.

The case hinged upon a boy who is employed in a law office in New York City during the day and who attends school at night. The father of the boy refused to send his boy to a part-time school and was arrested and fined. He appealed to the higher state courts but the decision of the lower courts was affirmed. Then the plaintiff appealed to the United States Supreme Court upon the claim that the statute illegally interferes with the ability of the son to earn a living and gain an education by attendance at night school.

COLORADO AMENDMENT DEFEATED

The constitutional amendment for revising the office of the Colorado state superintendent of public instruction was overwhelmingly defeated at the November election. In Denver, the vote against the amendment was more than two to one. The amendment proposed to modify the duties of the state superintendent and to provide a state board of education.

SCHOOL LAW

—The state education department of Wisconsin has recently ruled that the school board has no authority to appropriate money from the school treasury for the purpose of providing lunches for the parent-teachers' meetings. The department points out that any order so drawn is an illegal order and subjects the members to a severe penalty.

Another ruling is to the effect that where a social gathering or meeting is held in a schoolhouse, it is the duty of the school board or someone under the direction of the organization, to clean the schoolroom and place it in good condition for the classes the next day. Under the ruling, the teacher in charge of a school is not under obligation to perform any janitor service when public meetings of any kind are held in the schoolhouse.

—The California constitutional amendment, which had for its purpose the reorganization of the state education department, was lost at the recent election, with slightly over 100,000 votes. It was evident that the popular attitude was against giving up an elective office for an appointive office. The amendment was loyally supported by the state teachers' association but it was evident that there was a lack of interest on the part of a large number of teachers.

The state education department has not given up hope for the measure as State Supt. William J. Cooper has announced plans for a campaign to secure the adoption of the reorganization amendment in 1930.

—The supreme court of Wisconsin has decided that farming property may, by proper legal procedure, withdraw from the support of high-school districts. More than 60 high-school districts will be affected. The decision culminates a six-year fight in the legislature to give to rural communities the right to withdraw from high-school districts where the farmers felt that the school tax was burdensome.

Three fourths of the electors and taxpayers, who own more than one half of the territory sought to be detached from School District Number 8, Jefferson county, filed an application with the school-district clerk demanding that a meeting of the school boards and town boards be called for the purpose of detaching certain territory from the school district All were outside of the village limits of Azatlan, Farmington, and Johnson Creek and adjoined other existing school districts.

The school clerk refused to take any notice of the application and a mandamus was applied for in the court. There was a motion to quash the writ, which was denied, and an appeal was taken to the supreme court.

—Minneapolis, Minn. Legal authority of the school board to prohibit high-school students from driving automobiles to school has been asked as a result of a new rule proposed by Mr. C. E. Purdy, a member of the school board. The rule provides that pupils shall not be permitted to drive automobiles to school and park them on nearby streets during school hours, without a permit from the superintendent's department.

—The supreme court of Illinois was recently asked to review a decision of the circuit court of Chicago, in the case of C. S. Fiedler against the board of education of Bloom township, to prevent the purchase of property and the building of a high school.

It appears that the citizens of Bloom township had indicated their approval at an election and voted a bond issue of $760,000 for the new building. Mr. Fiedler and his associates then opposed the election and the result. The matter was taken to court, a temporary injunction was granted and then dismissed. The circuit court later declared in favor of the board of education but those opposing were not satisfied and have carried the case to a higher court.

MUNICIPAL APPROVAL OF SCHOOL-BUILDING PLANS NOT REQUIRED IN NEW JERSEY

The New Jersey laws of 1928, providing that "nothing in the law shall require the board of education of any school district to secure approval of its plans and specifications by, or to require any board or any contractor doing school construction work, to secure a building permit from the municipality," makes specific what the state education department has always held to be true as a matter of general law. It is conceded that the school district, even though coextensive as to physical boundaries with the municipality, is an entity entirely distinct and separate for all purposes connected with the operation and management of the public schools therein. In the absence of express authority extending municipal control over school-building-construction operations, the latter is to be conducted entirely by the local board of education subject only to the restrictions of the school-building code of the state board of education.

At the present time, there is not only an entire absence of legislation extending municipal control over school-building-construction operations, but the very definite statute of 1928 emphasizes the inability of a municipality to exercise any control through building permits over school boards or their contractors. In accordance with the laws, it follows that municipal health officials and plumbing inspectors are equally without power to assert any authority whatever over school buildings under the control of the local boards of education.



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BUILDING NEWS OF THE SCHOOLS

LARGE SCHOOLS OPERATED AT A LOWER COST THAN SMALL SCHOOLS

—Larger school centers for both elementary and high schools, providing for more careful attention to the organization of the school, will do much toward eliminating waste and promoting economy and efficiency in the Oregon public schools, according to Prof. Fred L. Stetson, of the University of Oregon school of education.

Professor Stetson, in speaking before a school financial conference, held at the University of Oregon in Eugene, declared that the larger schools are able to effect greater economy and that one of the greatest handicaps to the Oregon school system is the fact that most of the schools are too small.

Data was presented by Professor Stetson, showing the cost per pupil in daily attendance in Oregon schools. In 1,495 one-room rural schools of the state, the medium cost per pupil was found to be $86 annually. Two-room schools showed a per-capita cost of $60; schools of from 50 to 150, $44; from 150 to 199, $45, and over 200 pupils, $43.

The data given by Professor Stetson shows that the best chance for economy lies in consolidating schools, as the smaller schools have a much higher per-capita expense, even though lower teaching salaries are the rule in the rural districts.

What is true of the elementary schools is also true of the high schools, according to Professor Stetson. A medium cost per student of $172 was shown in a group of ten high schools with an attendance of ten pupils. A drop in the medium cost is shown as the schools increase in size, high schools of from 40 to 50 averaging a per-capita cost of $102.

BUILDING NEWS

—Boston, Mass. The school board has begun the formulation of plans for a ten-year school-building program, to involve the expenditure of millions of dollars within the next few years.

With the purpose in view of obtaining economic and educational efficiency in the construction and equipment of school buildings, and at the same time saving much time formerly consumed in the drawing and approval of plans, the board has proposed the appointment of an advisory committee of three to work with the superintendent on sites and plans for new school buildings. The committee will consist of an expert in schoolhouse planning from an educational point of view, an expert from a health point of view, and an architect, and will have authority to employ such paid experts and assistants as are necessary for the proper performance of their duties.

—Boston, Mass. The school board has adopted a recommendation for a study of school-building standards looking toward a revision of the present standards and a decrease in school construction costs. The action has been taken because of an apparent divergence between the present accepted standards for new school buildings and those favored by educational experts.

—Chagrin Falls, Ohio. The school-bond issue in the amount of $390,000 failed to carry at the November election.

—Snow Hill, Md. The school-bond issue for Worcester county schools failed to pass at the November election. The same proposition was lost at an election held in the spring of 1927.

"The elimination of guesswork in the planning of school-building programs represents one of the greatest changes in recent years," says the Bedford, Ohio, Register. "Three distinct practices have characterized this move: (1) the policy of purchasing school sites four or five years in advance of the needs; (2) the increased acreage now considered necessary for adequate school grounds; (3) the use of statistics and data which govern the location of the school site." The newspaper then commends the school board of Maple Heights, Ohio, for its foresight in the selection of school sites.

—Tiffin, Ohio. Bond issues totaling $236,000 were approved by the voters of Seneca county on November 6. The village of Bettsville voted to expend $36,000 for school-building improvements. The Green Springs school district defeated a proposal to issue $100,000 in bonds for a new school.

—Janesville, Wis. The school board has asked the city council to approve a school-building program, calling for the expenditure of $350,000 for new school buildings and alterations to old ones.

—At Summit Station, Ohio, a bond issue of $50,000 was approved for an addition to the school and a new gymnasium.

—Carroll, Ohio. The village recently approved a school-bond issue of $115,000, and Lithopolis approved an issue of $60,000.

—Abington, Pa. The voters recently approved a school-bond issue of $375,000 for school-building purposes.

—At Plymouth, Ohio, the voters carried a school-bond issue of $75,000 by a large majority. The proceeds of the bond issue will be used for the erection of a new high school.

—Indianapolis, Ind. The school board recently adopted a resolution calling for a school-bond issue of $185,000 for the purchase of additional ground for two high schools and sites for six grade schools.

—Amesville, Ohio. The $65,000 school-bond proposition for a new high school was defeated by a close majority. The defeat of the proposition places the school board in a serious situation, as the school system is in danger of losing its charter because of the inadequacy of the school facilities.

—Birmingham, Mich. The school board has begun plans for an expansion of the school-building facilities.

—Madison, Wis. The school board will shortly take up the question of a large bond issue for the construction of new schools and the purchase of sites in 1929. The total bond issues for the next year will be about $1,100,000, the proceeds of which will be used for the new West Side High School, the Franklin School, and sites for two other schools.

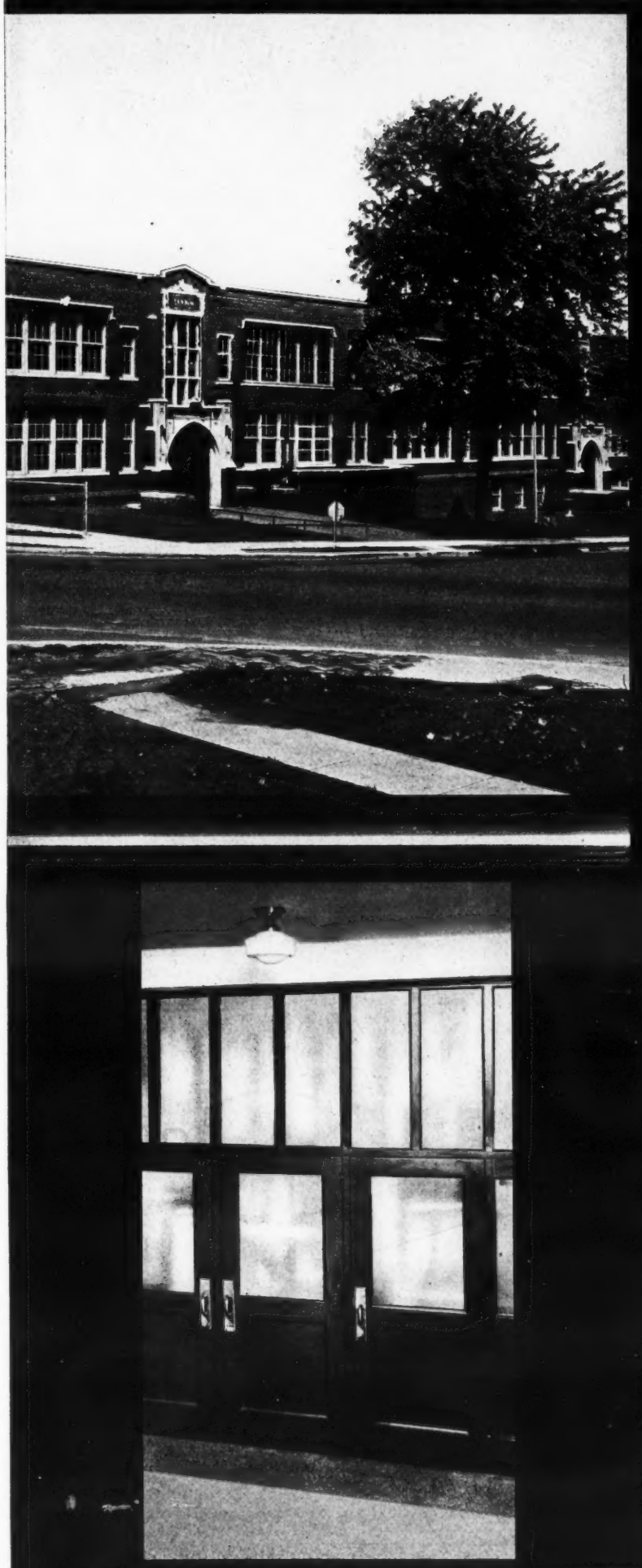
—Macomb, Ill. An election will be held to vote an increase in the tax levy for school-building purposes.

—Davenport, Iowa. The building committee of the board of education recently visited a number of model school plants as a means of obtaining ideas for the new schools to be built with the recently voted $350,000 school bonds. The present program will include an administration building, a gymnasium, and a heating plant, to be erected at a cost of $450,000.

—The new $800,000 senior high school at Alton, Ill., was dedicated recently. During the day, a number of superintendents from nearby Illinois

(Continued on Page 104)

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School, Thornton, R. I. Wm. R. Walker & Sons, Arcts.

Sectionfold partition dividing classrooms with blackboard panels in doors

For Dividing Classrooms and Gymnasiums

WILSON SECTIONFOLD PARTITIONS enable the quick division of a large room into as many small rooms as desired.

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OVER FIFTY YEARS IN BUSINESS

(Continued from Page 102)

cities accompanied Supt. Curtis on a visit to the various schools. Following a round-table conference, at the close of the day, they attended the dedication exercises in the evening. State Supt. Francis G. Blair of Springfield was the principal speaker.

—Rock Island, Ill. The board of education has begun plans for a new school, to be erected in the southeastern part of the town where there has been a large increase in population. An addition to the Franklin Junior High School is proposed, to take care of a total enrollment of 900 pupils.

—Marshall, Mo. The school board has recently dedicated two new schools, making five schools comprising the local school plant. During the past six years the board has expended a total of $515,000 for school-building purposes.

—Supt. C. V. Courter of Flint, Mich., has submitted a building program to the school board. The program calls for the erection of eight school buildings, at a total cost of $2,650,000 within a period of three years.

—The school board of Leon county, Florida, has received bids on $250,000 of the half-million-dollar bond issue recently carried at the November election. The proceeds will be used for the erection of an elementary school, the enlargement of another school, and the acquirement of new school sites.

—South Gate, Calif. Steps have been taken to secure a new high school for the fall term of 1930.

—Anderson, Ind. The city council has granted the school board permission to float a school-bond issue in the amount of $100,000 for school-expansion purposes. New schools will be erected in the north and south sections where congestion is most acute.

—Cleveland Heights, Ohio. The board of education has awarded two contracts for new school buildings from the $1,000,000 school-bond issue approved at the November election. The projects include a new junior high school, to cost $600,000, and an addition to an elementary school, to cost $100,000.

—The county board of Mercer county, W. Va., has begun plans for a school-building program. It is planned to erect a consolidated school on a site near the towns of Tazewell and North Tazewell.

—Mr. William B. Ittner, St. Louis, Mo., has been appointed to take charge of a school-building program for the school authorities of St. Joseph, Mo. The program which will include a high school, a junior high school, and six elementary schools, will be carried out at a cost of $2,180,000.

Mr. Ittner will assume the responsibility for the supervision of the planning and construction, and will have as associates several St. Joseph architects, who will assist in the preparation of the plans and specifications for the buildings.

During the bonding campaign and the work of selecting an architect, a citizens' committee of fifteen, with Mr. L. V. Anderson as chairman, rendered valuable assistance.

—The New York City board of education has provided the sum of $50,000,000 in the 1929 school budget for new buildings. The sum of $4,600,000 is provided for repairs.

—The voters of Mingo Junction, Ohio, have approved a school-bond issue of $200,000 for the erection of a new high school.

—Sylvania, Ohio. The voters have approved a school-bond issue of $230,000 for school-building improvements. The program includes two new schools, and an addition to the high school.

—Euclid, Ohio. The school board has taken steps toward relieving congestion in the schools, following the approval of a $900,000 school-bond issue by the voters at the recent election.

—Mantua, Ohio. At the November election, the voters approved a school-bond issue for a new building.

—Plymouth, Ohio. The citizens have approved a school-bond issue of $75,000 for a new high school.

—Springfield, Ohio. The school board is cooperating with a group of citizens in the expending of the $750,000 school-bond issue for new schools.

—Libertyville, Ill. A school-bond issue of $100,000 has been approved for the erection of an addition to the high school.

—Toledo, Ohio. The school board has purchased a site for the erection of portable buildings to take care of children in overcrowded sections of the city.

—The Madison, Wis., board of education on recommendation of Supt. R. W. Bardwell voted to put an item of $400,000 in the budget for a new west-side high school. It is expected that the construction work on the building will extend over two years. The appropriation of $150,000 for a new grade school has been held in abeyance pending the selection of a site by the city council.

—Middletown, Ohio. At the November election, the voters of the city approved a school-bond issue of $900,000 by the largest majority in the history of the schools. The proceeds of the bond issue will be used for the erection of two junior high schools, with a capacity of 1,200 pupils each.

—The new Russell School at Moscow, Idaho, was dedicated with a fitting program on November 4. The building which houses the first four grades, was occupied on October 15. It contains an auditorium and recreation room, in addition to classrooms, and was erected at a cost of $85,000. The building was planned with the aid and advice of Mr. Fulton Gale, superintendent of the Moscow schools, and was erected from plans of, and under the supervision of, Messrs. Whitehouse & Price, architects, of Spokane, Wash.

—The new Central School at Winsted, Conn., has been occupied.

—Marion, Ohio. A school-bond issue of $750,000 was carried at the November election, with 68 per cent of the votes favorable to the proposition. The proceeds of the bond issue will be used for the erection of a junior high school, an elementary school, and for the purchase of sites for a senior high school and four grade schools.

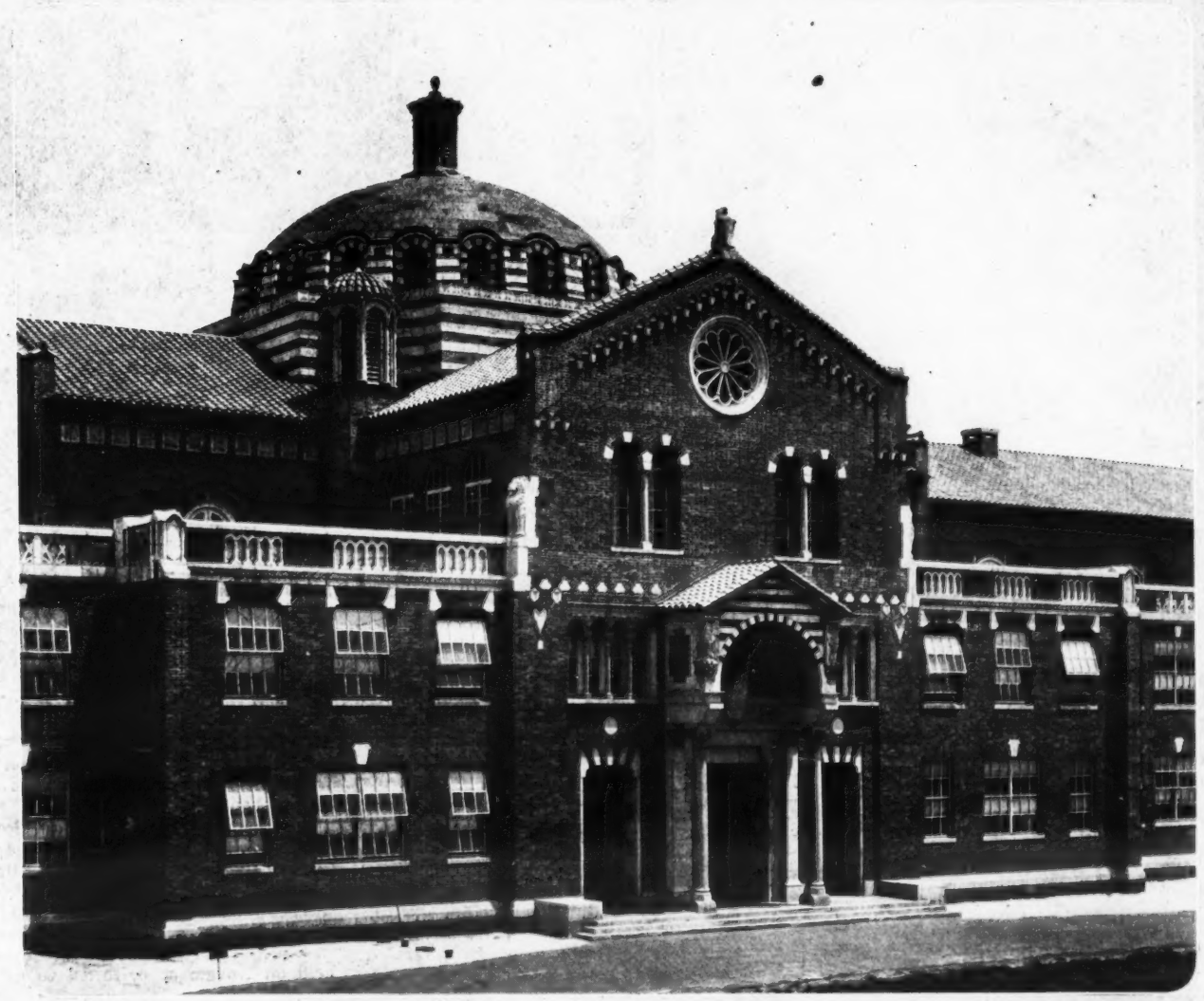
—The formal dedication of the new Theodore Roosevelt High School in the Bronx, New York City, was held on Tuesday, November 20. Mayor James J. Walker formally turned the school over to the city, and Mr. William R. Hayward, principal of the school accepted it at the hands of the Mayor.

—New York, N. Y. Contracts totaling $2,269,833 for the construction and equipment of the Abraham Lincoln High School, in Coney Island, Brooklyn, have been awarded by the board of education. The building, which will be four stories in height, with 62 classrooms, will accommodate 3,696 students. It will be erected at a cost of $1,848,780.

—Wilmington, Del. The corner stones of the E. P. Warner School and of the John Palmer School were laid on Saturday, November 24. The Warner School is an elementary school, with facili-

(Concluded on Page 106)

INTERNATIONAL AUSTRAL WINDOWS



Girls' Senior High School
Atlanta, Georgia

Edwards & Sayward
Architects

NO detail of school planning is of more vital importance than the windows, for upon them depends proper ventilation.

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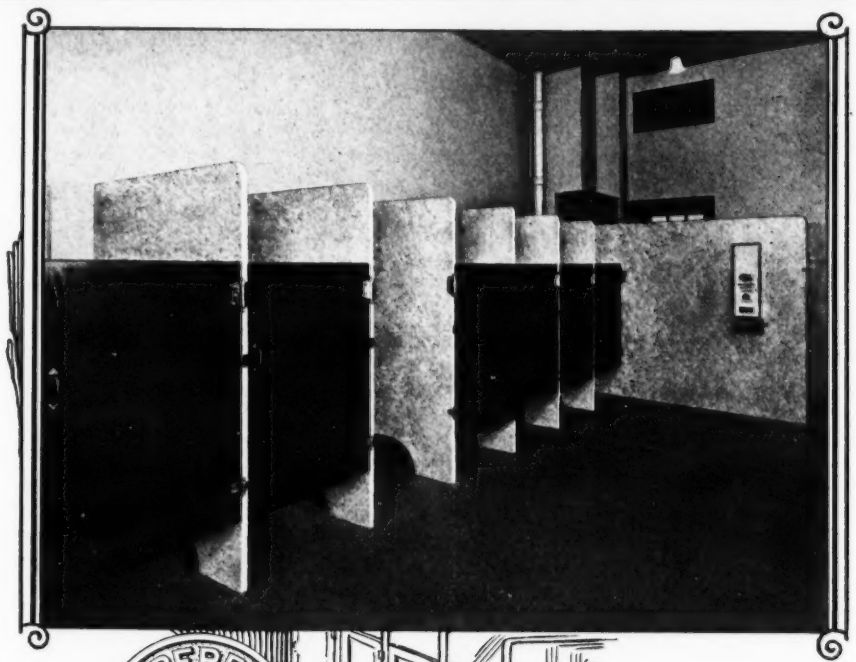
JAMESTOWN, NEW YORK

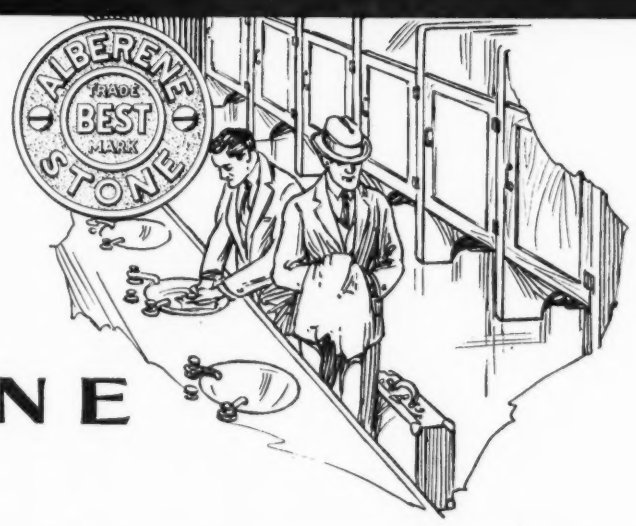
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ALBERENE STONE

(Concluded from Page 104)

ties for elementary and junior-high-school work and will be completed at a cost of $725,000. The John Palmer School will be erected at a cost of approximately $208,000. The board of education has under consideration recommendations for two additional buildings, to cost approximately $1,000,000.

—Woonsocket, R. I. The school board has adopted a school-building program for 1929, estimated to cost $175,000. The building program is intended to relieve the congestion in three school districts, now served by four schools. It provides for the erection of an eight-room building, at a cost of $65,000, the renovation and building of an addition to the East Woonsocket School, at a cost of $41,244, and similar work at the Summer School, at a cost of $24,860.

—The school board at Harlandale, Tex., has called a school-bond election to vote $200,000 in bonds for a new school building. The action has been taken to meet the demand for additional school accommodations. At present, more than 200 pupils are on half-day sessions.

—Seymour, Conn. Following a careful study of various kinds of slate material, the board of education has taken action toward replacing all substitutes with genuine slate blackboards. During the present year, all the blackboards in the Center School were replaced by slate blackboards.

—At a school-bond election held on November 2, the citizens of Brecksville, Ohio, approved a school-bond issue of $319,000 for the erection of a two-story school building. The election was carried with a vote of 435 for, and 297 votes against the proposition.

—On November 6, the citizens of Topeka, Kans., approved a school-bond issue of $1,100,000, the proceeds of which will be used for the erection and equipment of a senior high school. The bond issue was carried by a vote of 15,893 for, and 8,155 against the proposition. The board of education will shortly select an architect for the structure, and bids for the construction work will be requested in the near future.

—On November 6, the citizens of Bibb county, Georgia, approved a school-bond issue of $500,000 for the erection of two elementary schools and for additions to the existing buildings.

—The voters of the school districts of Carey, Ohio, on November 6, approved a school-bond issue of $120,000 for a new grade school and an addition to the high school.

—Toledo, Ohio. On November 6, the citizens approved a five-million-dollar school-bond issue, which is to be used for the erection of a number of modern elementary schools for the buildings which are lacking in these accommodations.

The new bond issue is in addition to one for $11,000,000 which was approved in August, 1920. This bond issue provided funds for the erection of eighteen new buildings, for new sites and playgrounds, and for the remodeling of a number of old buildings.

—Dayton, Ohio. The citizens, at an election held on November 6, approved a school-tax levy of four tenths of a mill for operating expenses of the schools, and another levy of four tenths of a mill for school-building purposes. The bond issue was carried by a vote of practically three to one. It will make possible the reinstatement of night schools, summer schools, medical and dental inspections, and will permit the erection of adequate buildings for the normal growth of the school population and funds for the upkeep of the school property.

—Staffordsville, Conn. A new four-room school has recently been completed and occupied. The building has been erected on a three-acre plot of ground donated to the school, and was completed at a cost of $40,000.

—The voters at Rockford, Ill., on November 6, approved a school-tax rate increase of five eighths of one per cent, which makes the new rate 2 per cent for the next school year. The new rate provides 1½ per cent for educational purposes, and one half of one per cent for building purposes.

The new increased tax rate makes it possible for the board of education to build an average of one new elementary school every two years from the proceeds of current taxes.

Under the present policy of the board, it is planned to pay for each new building as erected, and to resort to a bonding program in the erection of large junior and senior high schools.

During the present year, the board of education will let the contract for a new elementary school for pupils in the north end of the city who have been housed in rented and temporary quarters.

—Akron, Ohio. The voters of the city, on November 6, approved a school-bond issue of $2,800,000 for new school buildings and sites. The school-bond issue led all other bond issues, with a favorable vote running nearly three to one in favor of the bonds.

—Wenatchee, Wash. At an election held on November 3, the voters of the city approved a school-bond issue of $245,000 for a junior high school. The bonds will be used for the erection of the first unit of the junior high school to accommodate pupils of the seventh, eighth, and ninth grades.

—Willoughby, Ohio. The school-bond election held on November 6, failed to be approved by the voters.

—The citizens of Ottawa Hills, Ohio, at the November election, approved a school-bond issue of $180,000 for new school buildings.

—An $85,000 school-bond issue was defeated by the voters of the Sugar Creek, Ohio, school district.

—A proposed school-bond issue of $85,000 was defeated at the November election held at Strasburg, Ohio.

—The voters of Scott township, near Harlansburg, Pa., recently approved a school-bond issue of $34,000 for the erection of a high school.

—West Mansfield, Ohio. The voters have approved a school-bond issue of $75,000 for a new school in Rushcreek township.

—A new school building has been completed and occupied in District No. 3, Sumter county, Florida.

—Chagrin Falls, Ohio. The school-bond issue proposition was defeated on November 6, with a vote of 769 for and 649 against the issue.

SCHOOL-BOND ISSUE PASSED AT SHAKER HEIGHTS, OHIO

The citizens of Shaker Heights, Ohio, on November 6, approved a school-bond issue of $1,250,000, which will be used for the erection of a senior high school to cost $1,150,000, for additions to school sites to cost $75,000, and for equipment for the Lomond School to cost $25,000.

The item of $75,000 for land will provide for the acquirement of a junior-high-school site, on which the board will erect a building to cost approximately $600,000 within the next three years.

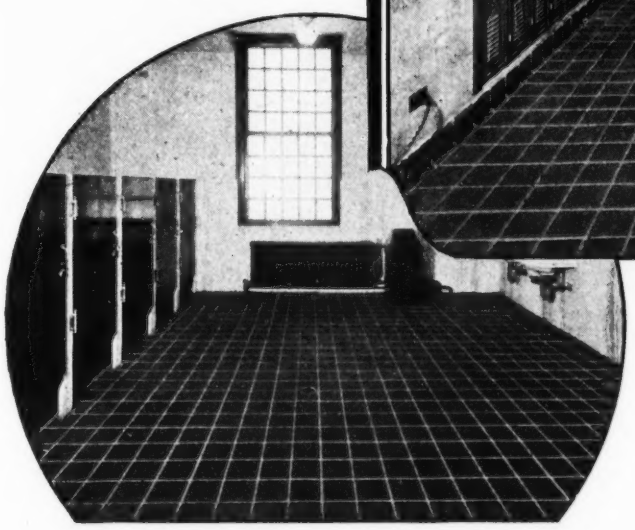
SCHOOL-BOND ISSUE AND TAX LEVY CARRIED AT CLEVELAND

The school-bond issue and tax levy at Cleveland, Ohio, was carried with a substantial majority at the election held on November 6. The proceeds of the school-bond issue of $2,000,000 will be used for the erection of a school-administration building and for a junior high school.

Adequate Protection for SCHOOL FLOORS AND WALLS

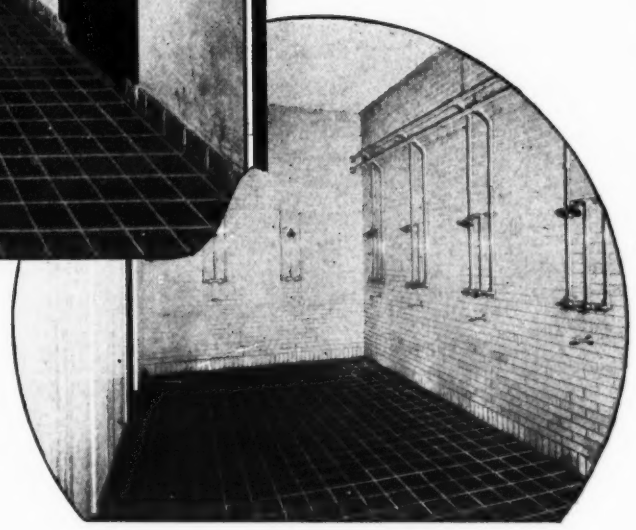


Section of Toilets, Garfield Heights High School, Garfield Heights, Ohio. Architects, Fulton & Taylor, Cleveland. Tile Contractor, Wadsworth Addison Co., Cleveland.



Corridor, Garfield Heights High School, Garfield Heights, Ohio. Architects, Fulton & Taylor, Cleveland. Tile Contractor, Wadsworth Addison Co., Cleveland.

Shower Room, Garfield Heights High School, Garfield Heights, O. Architects, Fulton & Taylor, Cleveland. Tile Contractor, Wadsworth Addison Co., Cleveland.



School buildings, if they are to return dollar for dollar value for the money invested, must be constructed of durable materials which will withstand the hard usage to which they are put.

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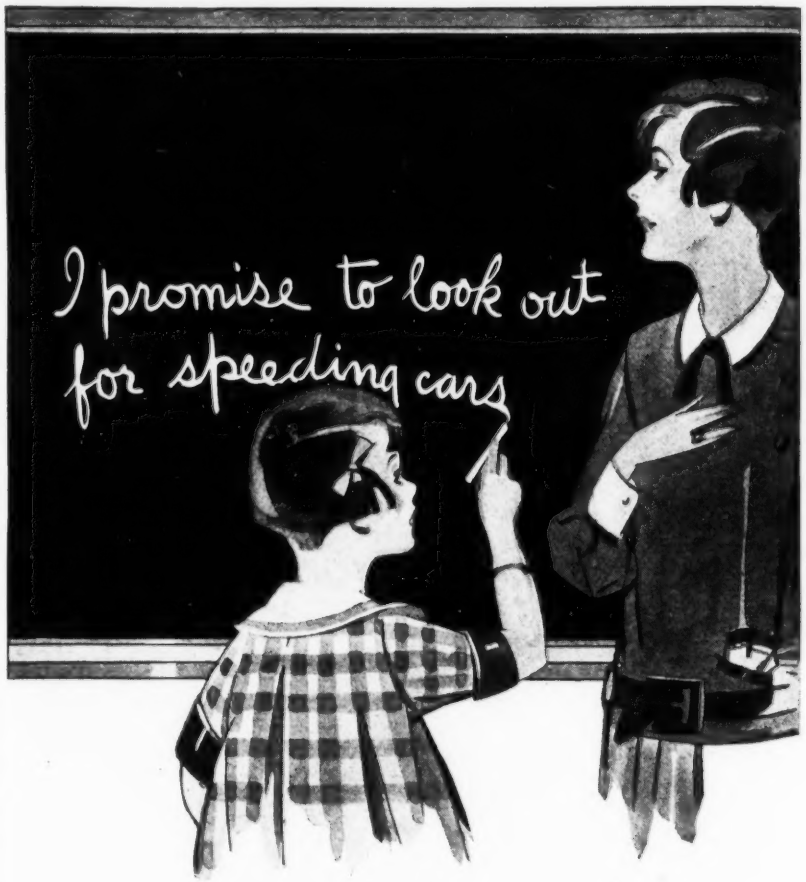
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Safety does not depend on "remembering" when the playground is enclosed with an Anchor Playground Fence. Safety is enforced. Headlong dashes are stopped at the boundary of the playground.

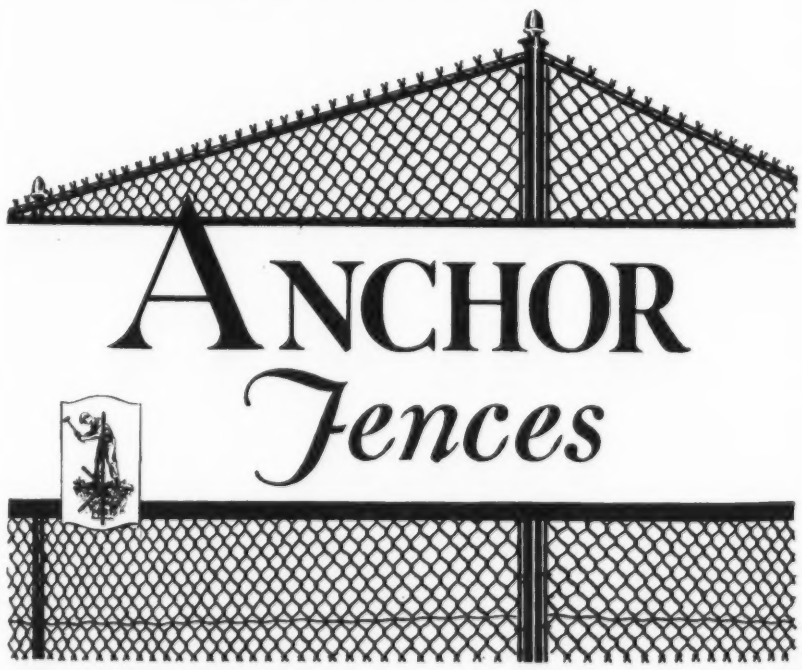
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And the hardness and toughness of Alundum abrasive enables this tile to stand up indefinitely even under the heavy traffic which school stairways receive.

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School-Board News

THE PROGRESS OF EDUCATION IN THE UNITED STATES

The U. S. Commissioner of Education, in a report to the secretary of the interior for the fiscal year ending June 30, 1928, offers a brief résumé of the important movements in the field of education, presenting statistics based on data collected during the year 1926.

The report shows that in the year 1926, there were 20,984,002 pupils enrolled in the public schools, and 2,143,100 in private elementary schools, including kindergartens. The total number of pupils in all schools in the country was 28,296,484. The total number of teachers employed in all schools was 977,291. The total cost of maintaining and operating the schools was $2,744,979,689, and the total value of school property was $8,125,085,472.

The total cost of public elementary and high schools in 1903 was $251,457,625, which by 1913 had doubled, being $521,546,375; by 1920 it had doubled again, to $1,036,151,209; and in 1926, doubled again to $2,026,308,190. The cost per pupil in average daily attendance was $95.17 in 1924, $98.45 in 1925, and $102.05 in 1926. Expenditures per capita of population for these years are $16.25, $17.15, and $17.50.

Although the data indicates a large increase in the number of students enrolled in the small high schools, the increases are as yet not keeping pace with the increases in enrollments in the urban high schools. Because of inaccessibility, or the failure of objectives or materials, or methods of instruction obtaining in these high schools, these schools are evidently reaching a relatively small proportion of the rural children. Only 25.7 per cent of the children from 15 to 18 years of age dwelling in rural communities are enrolled in rural high schools; only 71.1 per cent of the children of the same age group in urban communities are found in the urban high schools. Thus, nearly three times as large a proportion of city children go to high school as rural children.

The report shows that the junior high school as the immediate unit of centralization, and the senior high school and junior college as a second or third unit, are growing in extent and importance. The junior high school has not, however, made such rapid progress in the rural communities as the advantages offered seemed to promise. Thus far, only 12 per cent of the rural high schools have been reorganized upon this basis, whereas 47.2 per cent of the urban high-school systems have been organized on this plan.

The consolidation movement in the rural schools has progressed normally during the year. The estimates show that there were more than 3,000,000 children enrolled in approximately 17,000 consolidated schools in the United States during the school year 1927-28.

The growth of secondary education, one of the outstanding developments in recent years, has continued at an undiminished rate. At the present time, more than one half of the population of high-school age is in actual attendance. The urban, as distinct from rural enrollments, reveal greater opportunities of high-school attendance offered to city than to rural youth.

One of the significant movements in education during the past few years has been the rapid growth of the platoon, or work-study-play plan of school organization. In 1922, only 33 cities had platoon schools, while in 1928, there are 146 cities which have one or more of their schools organized upon this plan, or an increase of 18 cities a year. At the present time, there are over 800 platoon schools in these 146 cities.

AMONG BOARDS OF EDUCATION

—Houston, Tex. The settlement of a litigation which has been pending for several years was effected on November 2, when the court authorized the school board to offer $58,100 for a building site. The suit involved a piece of land on which condemnation proceedings had been begun. The death of the owner of the property and the contesting of his will had delayed the matter until the present time.

—Kaukauna, Wis. Members of the city school board were entertained at a six o'clock dinner given by the vocational school board on November 5. After the dinner, the vocational board held its regular monthly meeting.

—Randalia, Iowa. The members of the home-economics class prepared and served a dinner for the members of the school board and their wives on October 30. The guests were Mr. and Mrs. Edwin Benz, Mr. Robert Claxton, Mr. and Mrs. Myron Talcott, Mr. and Mrs. Vern Arthur, Mr. and Mrs. D. Holmes, and Mr. and Mrs. Frank Davis.

—Mr. F. E. Thomas has resigned as secretary of the school board at Dalhart, Tex. The business of the board is being handled by Mr. H. A. Finch, who has been appointed as temporary secretary.

—On election day, November 6, the nonresident teachers at Claremont, N. H., were permitted to go to their home towns to vote. The schools were kept in session on election day.

—The high-school cadets and school bands at Boston, Mass., were permitted to take part in the Armistice Day parade. Participation was allowed on a voluntary basis.

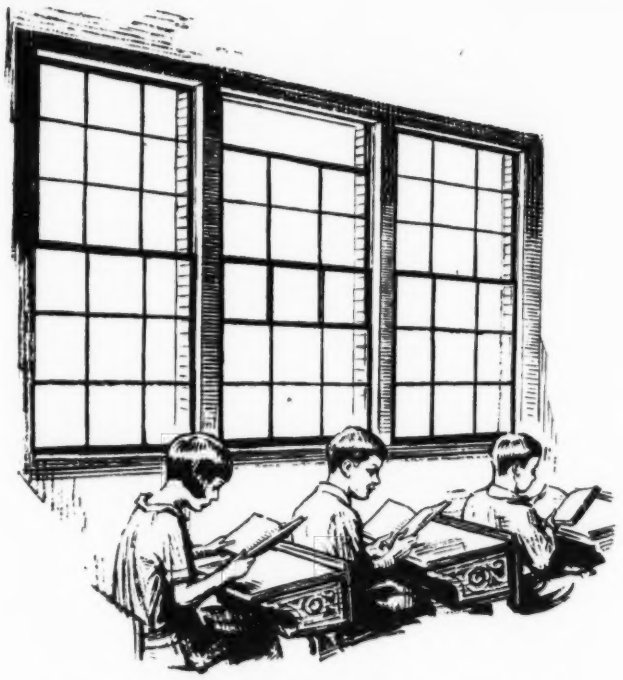
—Cleveland, Ohio. The school board will be asked to approve a resolution seeking to place a censorship on booklets and pamphlets entering classrooms from private firms and public utilities. Under the proposed rule, teachers will be permitted to use clippings from current magazines in classrooms, but all other published material must be submitted to Supt. R. G. Jones for approval.

—Hutchinson, Kans. The domestic-sciense department of the Liberty Junior High School recently gave a demonstration of a formal dinner and invited as their guests the school-board members. In the preparation and serving, the girls did everything from dressing the chickens to making the ice cream. About 100 girls participated in the preparation of the meal but only a few were assigned to the serving.

—Stanley, Iowa. Members of the school board and their wives were recently the guests of Supt. and Mrs. J. H. Thurau at dinner.

—The school board at Lansdale, Pa., has approved an appropriation of $200 for the purchase of pictures for the York Avenue School.

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—The school board of Cedar Falls, Iowa, has adopted a rate of $4 a night as the rental fee for the public use of the high-school gymnasium.

—Wausau, Wis. The school authorities and parents have cooperated in an effort to secure the strict enforcement of the state anticigaret law. Supt. S. B. Tobey pointed out that the habit of cigaret smoking among schoolboys has reached alarming proportions and that the effect is noticeable on the health and minds of the boys.

—Superior, Wis. Upon the recommendation of Mr. W. J. Sleeman, the board of education has decided to revise its by-laws to conform with the elective system placed in operation a year ago at the time the appointive system of choosing board members was abandoned. A committee has been appointed to make the necessary changes in the rules.

—The school board of Leominster, Mass., has received an opinion from the local city attorney to the effect that it is not required to pay the hospital and physician bills of students injured in athletic contests or physical-training activities, since such students take the work at their own risk, and the injuries to which they are subjected are wholly accidental.

Harold Parker, a student of the high school of Leominster, had asked the school committee to meet the bills incurred as a result of injuries, which amounted to $32. The case reached the school board and an opinion was asked of the city attorney.

—Fall River, Mass. The city has received a bid for the purchase of the Anawan Street site upon which the school administration building is located.

—North Attleboro, Mass. The school board has granted the use of the Park Street School for a class in airplane mechanics to be conducted by a private enterprise.

—Ann Arbor, Mich. The board of education has asked the city council for possession of a piece of ground adjoining the Wines athletic field. The ground is needed to carry out improvements to the field, including a concrete stand, a baseball diamond, and a running track.

—The school board of Lake Odessa, Mich., has decided to operate the schools on Eastern time. A vote was taken in the schools, which showed that 114 families favored fast time the year around.

—The Montgomery Circuit Court at Crawfordsville, Ind., has taken up the trial of the Indianapolis school board's suit to determine the powers of the state tax board and the constitutionality of the law giving the tax board jurisdiction over the school board.

The trouble is an outgrowth of a hearing by the tax board last spring when the board issued an ultimatum that no more school construction in Indianapolis would be permitted, unless the specifications called for more than one heating and ventilating system. Open, honest, and competitive bidding was demanded.

Should the decision be favorable to the school board, it is held that it would remove not only the Indianapolis board, but all city school boards in the state from the tax board's jurisdiction. A decision favorable to either party in the suit is expected to be appealed to the state supreme court.

—Iron River, Mich. The board of education has secured a 99-year lease on the county fair grounds at a rental of $1 a year. The grounds will be used by the schools for recreation purposes. The cost of landscaping the grounds will be borne jointly by the county and the school district.

—Pittston, Pa. The school board is cooperating with the local borough council in devising a plan for equitable abatements of mistakes and unequal assessments on taxable property.

—Lorain, Ohio. The school board will carry its fight for cheaper street-car fares for school children to the state utilities commission. The trouble arose when the Lorain street railway put into effect an increase of from five or eight cents on streetcar fares. Formerly, children en route to and from schools had paid a three-cent fare, but with the increase in fares, this was raised to seven cents.

—Silverton, Oreg. The school board has granted permission for dancing at 50 per cent of the high-school student affairs. Usually about four such affairs are held during each school year. The board has prepared new rules and regulations governing dances in the schools.

—Hutchinson, Kans. The school board has fixed a charge of $50 as the rental fee for the use of the Richardson school auditorium. A charge of $10 is made for rehearsals without heat, and $15 for rehearsals with heat.

—Berkeley, Calif. The school board recently defeated a proposal for a school-city employment bureau. The action was taken because it was felt that the consolidation of the two offices would not serve the best interests of school children.

—Farmington, Conn. Letters of resignation have been presented by Dr. J. A. V. Davies as town health officer and school medical inspector at the Center School as a result of the school board's failure to stand by its rule governing vaccination. In his resignation, Dr. Davies made it clear that the board's failure to abide by its rule made it difficult to further efforts for the promotion of a progressive school health program.

It appears the board of education had three times passed a rule requiring vaccination of pupils before admittance to classes. After 500 pupils had been vaccinated, there were still 50 whose parents objected, and these were dropped the first part of November. At a subsequent meeting, the board ruled that if the 50 children would present certificates signed by their parents and certified by a notary public that the parents were conscientious objectors, they would be readmitted to school, and they were accordingly admitted.

—Woburn, Mass. A change in the form of the municipal government, effective Jaunary, 1931, has been provided for through the passage of the recent biennial election referendum. The passage of the referendum means that there will be a change in the term of school-board members, each member to be elected to serve three years.

The referendum provides that at the annual municipal election this year, and again in 1930, three members of the school board will be elected to serve for three years, until their successors are appointed. In 1929, three members of the school board will be elected to serve for four years each, and in 1933, three members will be elected to serve for four years, and three for two years each. The new plan gives the school board a membership of nine members at all times, and provides for the election of three members for four-year terms, continuously, after the plan is in operation.

—Chicago, Ill. The board of education, the police department, and the local prohibition officers have cooperated in a movement to eliminate from the city all illicit liquor establishments catering to school children. The movement followed the shooting of a high-school student by the proprietor of an establishment a short time ago.

(Concluded on Page 112)

What Treatment Gives You This? Positive Key

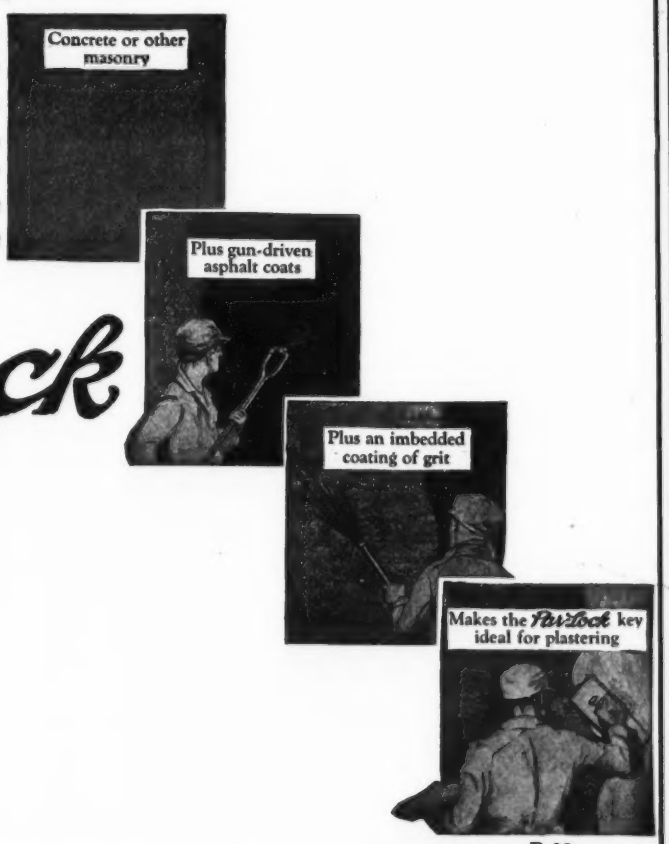
WHAT other satisfactory plaster key affords you the same kind of ceiling and wall protection that you find in Par-Lock?

Considered merely as a wall protection, Par-Lock offers an assurance of an adequate covering, since the asphalt coatings must be thick enough for the embedment of the coarse grit, which keys the plaster.

Only in a minor degree, does Par-Lock rely on suction for its plaster holding qualities. Harmful suction of the structural surface is stopped and the plaster retains its water of crystallization, insuring an adequate set.

With an elasticity which relieves the strains of expansion and contraction, with resistance to moisture, chill, stain and chemical reaction —above all, with adequate, positive key, Par-Lock is a dependable pre-plastering treatment—in the hands of skilled, responsible appliers. Communicate your needs to the nearest Par-Lock Applier.

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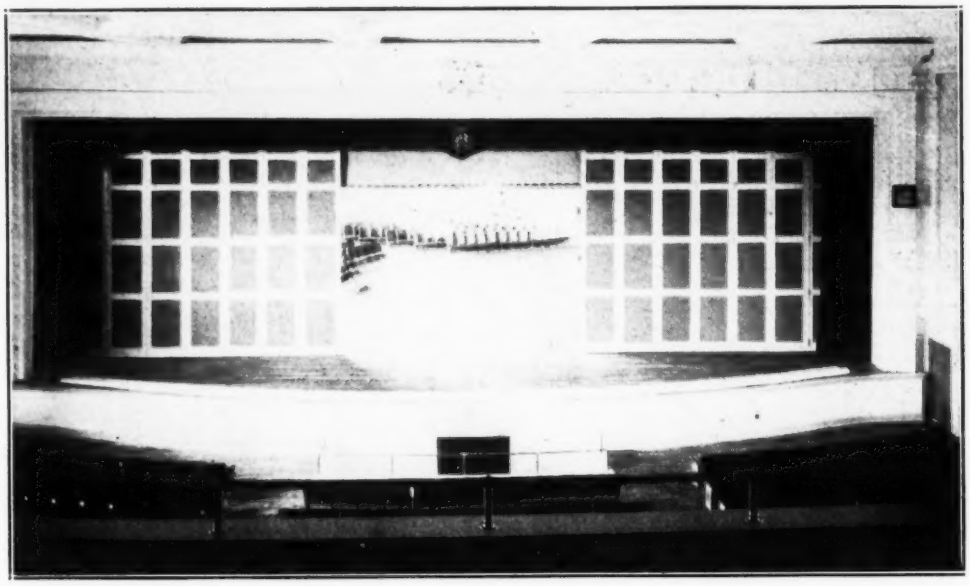


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COLUMBUS, 751 South Cassingham Rd.
DETROIT, 2457 First National Bldg.
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MINNEAPOLIS, 434 Builders Exchange
NEW YORK CITY, 50 Church Street
PHILADELPHIA, 1700 Walnut Street
PITTSBURGH, 614 Bessemer Building
SCRANTON, PENNA. Cedar Avenue
ST. LOUIS 1011 Telephone Building
TORONTO, 2258a Bloor Street, West
TRENTON, 339 Broad St. Bank Bldg.
YOUNGSTOWN, 503 City Bank Building
WILKES-BARRE, PA. 904 Second Nat'l Bank Building

P 29

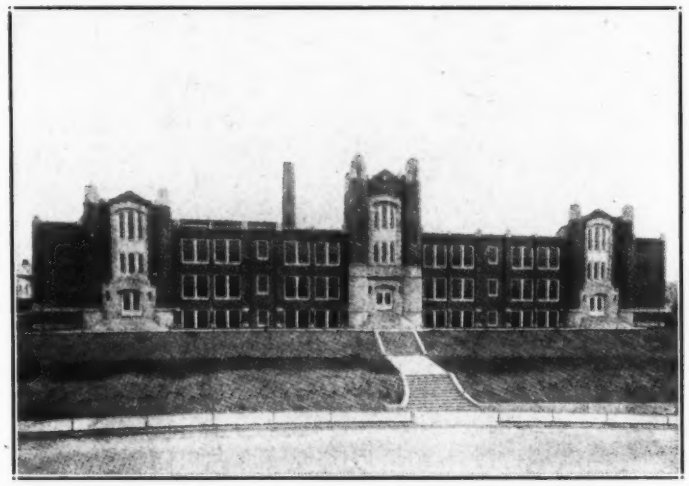
THE VORTEX MANUFACTURING COMPANY · *1987 West 77th Street, Cleveland, Ohio*



JUNIOR & SENIOR HIGH
DENISON, OHIO

J. KERR GIFFEN, *Archt.*

The above illustration demonstrates the Horn Partition dividing an Auditorium and Gymnasium. This arrangement makes it possible to seat spectators in the Auditorium to view an attraction in the Gymnasium. It also provides a large stage which would otherwise be prohibitive.



HORN FOLDING PARTITION

FOR

AUDITORIUM AND GYMNASIUM

MORE SOUNDPROOF—
MORE ECONOMICAL

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POSITIVELY GUARANTEED

Whatever your folding partition problems may be, Horn Folding Partitions will solve them.

They are absolutely sound-proof due to a method which is based on years of experience.

Easy operation is made possible by the structural superiority of the Horn Partition.

Positively guaranteed by manufacturer for a period of five years. All these features at a cost which will be a very pleasant surprise to you. Write for descriptive literature.

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HORN FOLDING PARTITION CO.
OFFICES – 216-222 CENTRAL AVE.
FORT DODGE, IOWA.

Representatives in all Principal Cities

(Concluded from Page 110)

Mr. Benjamin F. Buck, assistant superintendent in charge of high schools, reported that an investigation had proved unwarranted reports that students were keeping liquor in their lockers, or were selling it to other students from locker rooms.

—Los Angeles, Calif. Since October 21, the board of education has enforced a rule, providing that employees authorized by the board to receive reimbursement for carfare expense, shall be allowed such reimbursement at the lowest basic fare, which is 25 cents for four rides. Pending a decision of the U. S. Supreme Court, it was ordered that employees of the schools submit refund slips with their invoices. This means that no 7-cent fare refunds will be made so that there must be a refund slip for every 6¼-cent fare.

The rule applies to supervisors and teachers, clerks, secretaries, and other employees receiving carfare reimbursement on a monthly basis.

—St. Louis, Mo. The league of women voters has proposed a plan whereby it will carry on a campaign at the board-of-education election next April, to elect as members of the board, four candidates which it will select and support. The purpose of the league is to select four capable, earnest men and women interested in the schools, and with a wide understanding of the educational problems of the city.

—Council Bluffs, Iowa. The school board has approved a plan proposed by the local Lions' Club for the operation of a school traffic patrol system. The plan has been presented to the city council and fire and police board for approval.

—Chambersburg, Pa. The school board has presented a proposed ordinance to the city council, forbidding filling stations within 500 feet of public schools.

—Colorado Springs, Colo. The school board has ordered the removal of the 60-foot flagpoles at four schools. The flagpoles will be replaced with 30-foot poles, made of steel tubing and minus the guy ropes.

—West Bend, Iowa. The school board has passed a rule which provides that students who smoke or drink will be expelled from school and barred from school activities.

—The circuit court of Montgomery county, Indiana, has recently rendered a decision against the Indianapolis school board, in its suit to determine the power of the state tax board in regulating school-bond issues. The suit was begun several months ago following a controversy over the heating and ventilating specifications for school buildings in connection with a proposed bond issue for new buildings and additions.

—Mr. G. C. Graham, safety engineer of the board of education at Detroit, Mich., has presented a report to the board of education showing that accidents to school children are heavier per square mile in the downtown area of the city than in the outlying districts.

—San Diego, Calif. A jury of nine men and three women in the city court recently upheld the action of Mr. Frank B. Stein, vice-principal of the Wilson Junior High School, in whipping a pupil with a rubber hose. Mr. Stein was accused of assault and battery by Mrs. Lillian Reed, mother of Kenneth Reed, who was given a whipping by Mr. Stein in the school gymnasium. At the hearing of the case, Mr. Stein admitted the whipping but upheld his action because of the youth's previous bad record and the fact that he was a habitual truant.

—The school board has purchased collapsible bleachers for the Washington Junior High School gymnasium, to replace worn-out ones, at a cost of $600.

—The superior court of Siskiyou county, California, has been asked to grant a writ of mandamus to compel the board of school trustees of the Dorris Union Grammar School to pay the salaries of Mrs. Gertrude T. Moore and Mrs. Edna Shelley, teachers in the school. The instructors based their pleas for a mandamus on the ground they were permanent teachers in the Dorris district under the teachers' tenure act, which went into effect in August, 1927. It is the contention of the teachers that they were retained for the 1927-28 school term under a contract executed in August, 1927, one day after the law went into effect. The trustees, on the other hand, maintain that the teachers were hired for the term in May, which, if it is proved, will mean that the teachers are still on probation and are not eligible to become regular instructors for the 1928-29 term unless again retained by the school trustees.

—Council Bluffs, Iowa. The school board is again faced with the problem of high-school fraternities, which have been reported as being revived. The members intimate that some radical action may be taken to eliminate the influence of these societies.

—The board of education of Putnam, Conn., has reorganized for the year, with the election of officers. Mr. Eric Johnson has been elected as chairman, and Mrs. Elvira Barber as secretary of the board. The other members are Mrs. Minnie S. MacDonald, Mr. J. D. Potter, Mr. J. A. P. Gagne, Mr. John Bulger, Mr. S. M. Wheelock, Mr. J. J. Charron, and Mrs. Dorothy J. Bartlett. Mrs. MacDonald and Mr. Potter are the new members of the board.

—Watertown, Mass. An 11-year-old school girl who had been expelled from the Hosmer School because she made an error in addressing a letter, has been ordered reinstated following an investigation by the school committee. Not only the girl, but her two brothers had been expelled from the school because of "temperament." The children's mother refused to allow the children to return to school until she receives written notice from the school board.

—Chicago, Ill. Plans to revive the abandoned "visiting day" for school teachers under a different plan are being worked out by Supt. W. J. Bogan. Tentative plans contemplate the extending of invitations to teachers to visit classes of unusual interest on special days when demonstrations of new teaching methods or unusual classroom results are being carried on. Among the schools thought worthy of a visit is the Wentworth, where a new system of individual instruction has received some attention from educators.

—Hamtramck, Mich. Five schools have been equipped with radio receivers, loud-speakers, and amplifiers in order that radio programs may be held in either the gymnasium or auditorium. The school board has authorized an expenditure of $4,000 for the complete equipment.

—The annual open house of the schools at Lima, Ohio, was held on Tuesday and Wednesday, November 12 and 13. The purpose of the open house is to enable the parents to visit the various classes and to actually see what the students are doing in school.

—St. Louis, Mo. The school board has voted to place a tablet in memory of the five Central High School girls who were killed in the tornado when the old building was damaged, in the proposed new vocational-school building.



Improved PeerVent Unit with front removed to show interior. All parts can easily be removed and replaced, for inspection or cleaning, without tools. The air filter (extra equipment) can be of any make specified.

Latest Improvements in Unit Heating and Ventilating

backed by 38 years of specialized experience

Many important new features have been developed for PeerVent Heating and Ventilating Units during the past several months. In fact, *all* of the important features—radiator, motor, fans, and controls — have been improved. These improvements, made by the pioneer manufacturers of Heating and Ventilating Units, should have your careful consideration. Peerless Units built *fifteen years ago* are still in service and giving perfect satisfaction.

Adjustable motors are now standard equipment on PeerVent Units. Each Unit can be equipped to deliver the exact C.F.M. capacity required. If the C.F.M. requirements change at any time, the capacity of the Unit can be changed accordingly.

PeerVent Units can now be equipped with the PeerTherm Control as an integral part of the Unit. This device controls the fresh-air damper.

Details and specifications on request.

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The Evolution of the Public-School Plant

Arthur B. Moehlman, Professor of School Administration and Supervision, University of Michigan

New Educational Policy

The election of Frank Cody to the superintendency in 1919, and the administrative reorganization resulting from this change, brought under the superintendent for the first time[1] complete responsibility for the educational designing of the school plant. In the fall of 1919, upon the recommendation of the superintendent, the board of education adopted unanimously the first comprehensive educational policy. Briefly, these call for the establishment of:

a) The platoon elementary schools for the first six grades.

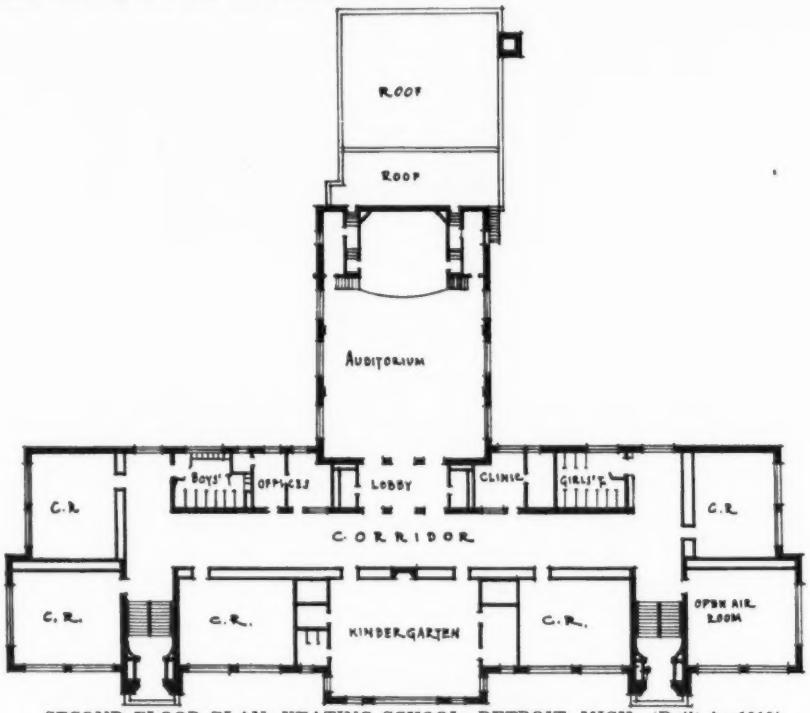
b) Large intermediate schools, grades 7, 8, and 9, to meet the needs of adolescent children.

c) Senior comprehensive high schools, grades 10, 11, and 12.

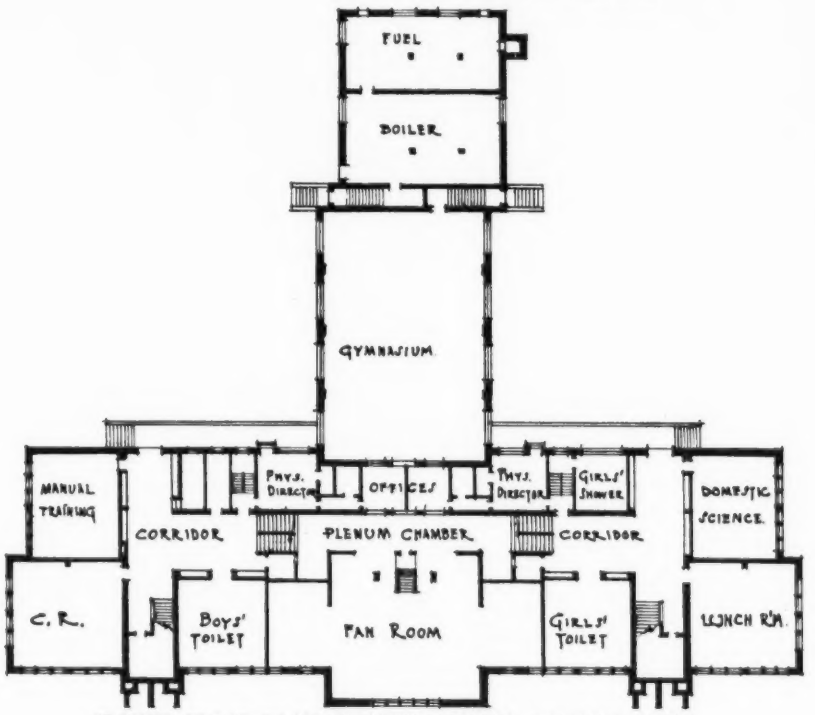
In the consideration of the public schoolhousing program, the board of education has followed these policies:

(Continued on Page 116)

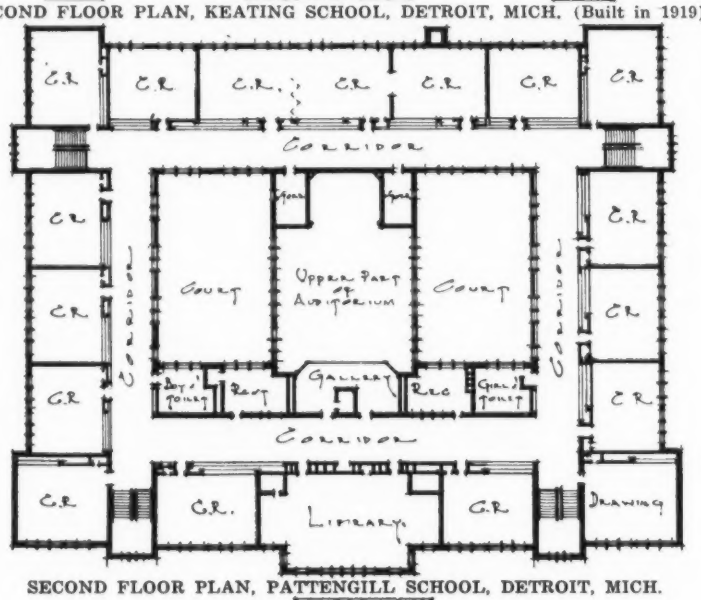
[1]Supt. Duane Doty designed the Webster school in 1873 but this was only an isolated case.



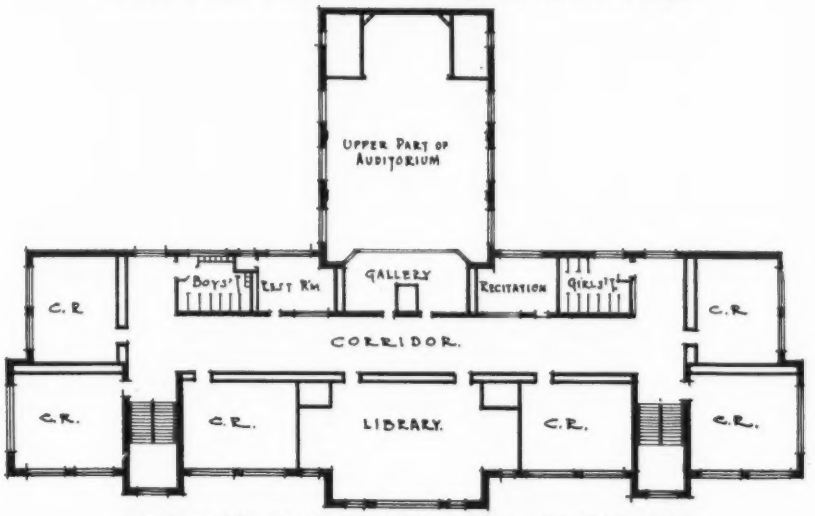
SECOND FLOOR PLAN, KEATING SCHOOL, DETROIT, MICH. (Built in 1919)



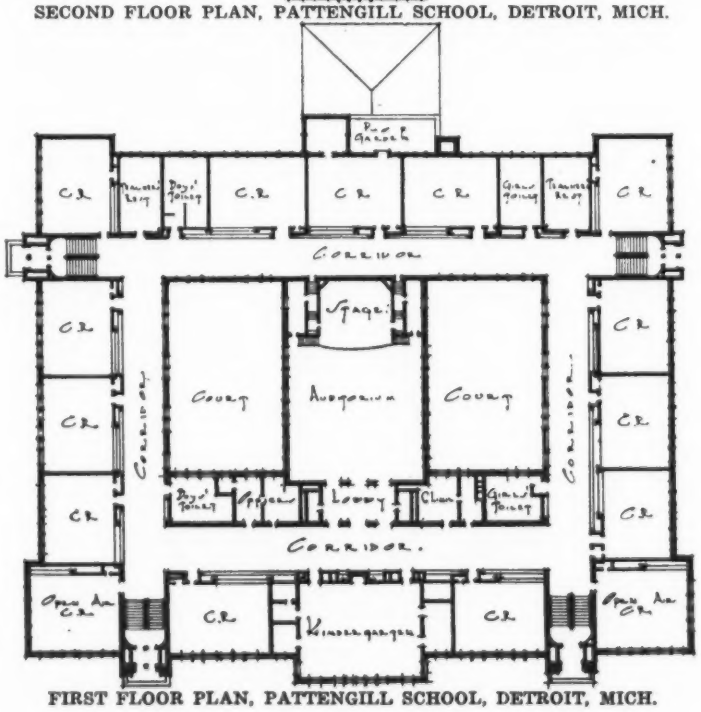
GROUND FLOOR PLAN, KEATING SCHOOL, DETROIT, MICH.



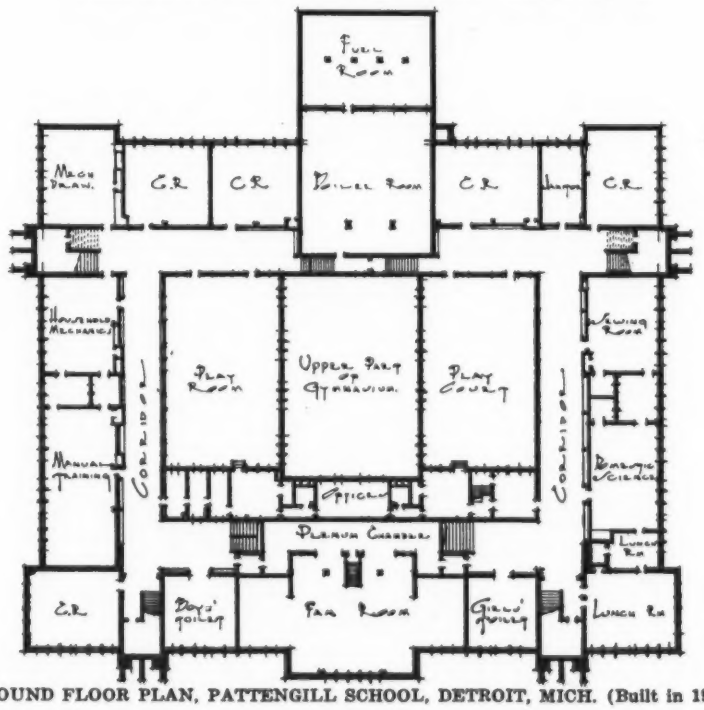
SECOND FLOOR PLAN, PATTENGILL SCHOOL, DETROIT, MICH.



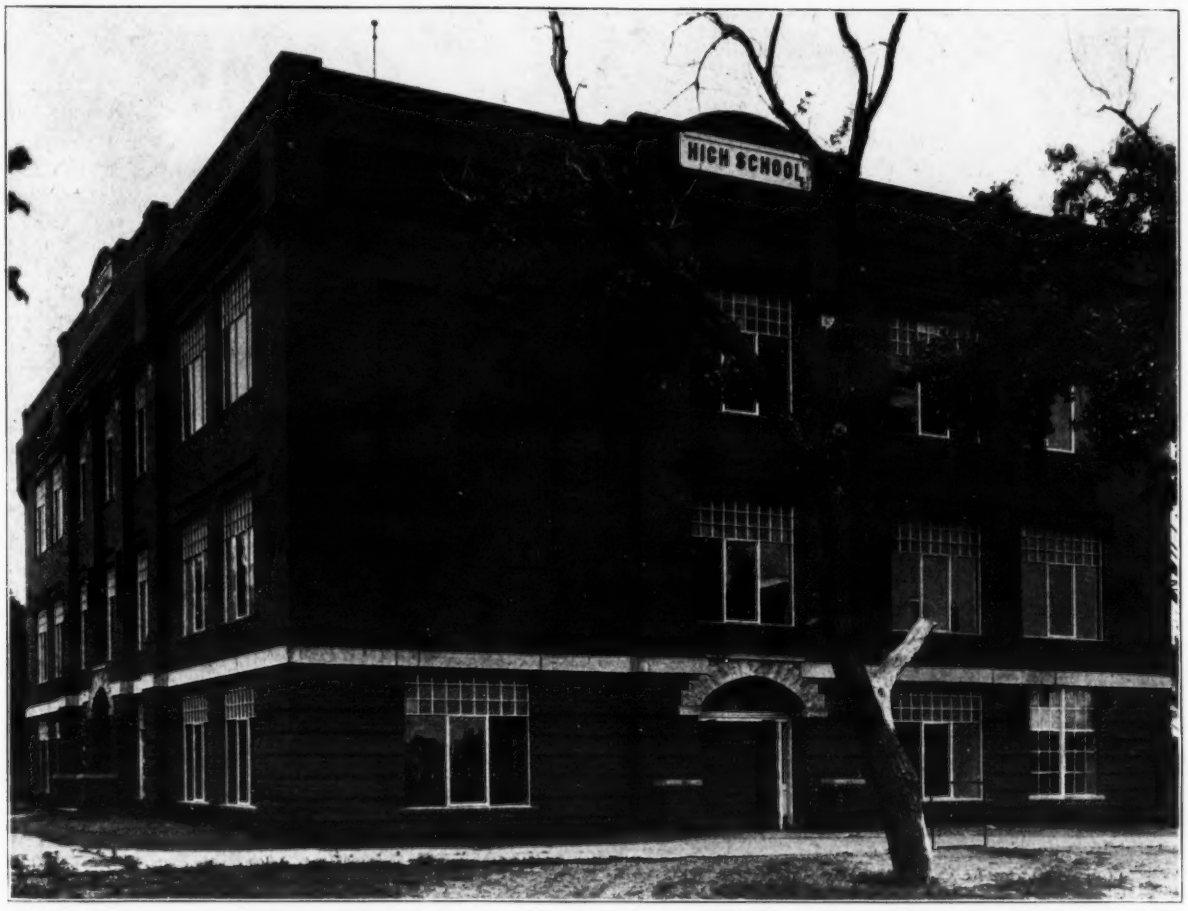
FIRST FLOOR PLAN, KEATING SCHOOL, DETROIT, MICH.



FIRST FLOOR PLAN, PATTENGILL SCHOOL, DETROIT, MICH.



GROUND FLOOR PLAN, PATTENGILL SCHOOL, DETROIT, MICH. (Built in 1919)



This Douglass, Kans., High School cut its fuel costs 37% by installing a Dunham Differential System

WHEN the Douglass, Kans., High School replaced a fan blast system, which was not providing proper heating, with a Dunham Differential Vacuum Heating System, the School Board not only made a change which is giving perfect satisfaction but also effected a saving of 37% in the fuel bills.

Read the letter from Mr. E. Floyd Greer, Superintendent of the Douglass Public Schools, to the Manager of C. A. Dunham Co.'s Wichita Office. It is a most convincing testimonial to the value of heating with Sub-Atmospheric Steam. Note particularly that Mr. Greer states they are "entirely satisfied" with the operation of the Differential Vacuum System, and that this system will be stipulated in further additions made to the school.

The Douglass High School has a total cubage of 229,320 cubic feet, and its sixty-five radiators have a total heating surface of 4,565 square feet.

The actual fuel saving for the heating season of 1927-28 as compared with fuel costs for the heating season of 1926-27, was $133.78.

Reproduction of letter received by the Manager of C. A. Dunham Co.'s Wichita Office.

DOUGLASS PUBLIC SCHOOLS
E. FLOYD GREER
SUPERINTENDENT

DOUGLASS, KANSAS.

May 7, 1928

J. H. O'Connor
1100 East Douglass Avenue
Wichita, Kansas

Dear Sir:

I am inclosing herewith an annual report submitted to the patrons of our school district relative to the expenditures for the fiscal year. You will notice in the bottom of the report an item that may be of particular interest to you, which indicates the increase and effeciency of our heating plant. I wish to say that we have been highly pleased with the Dunham specialties in connection with our heating system.

I was very much at a loss to know just what to do when a new heating plant was being considered here. I simply talked to represnatives of two or three companies and asked and acted upon the advice gathered from these individuals in respect to selection of materials to be used. I feel deeply grateful to you for the assistance rendered me and the school district in the sélection of equipment and the letting of our heating contract. I feel that the first years service rendered during any new appliances such as this is always the most difficult one. It is a labor saving device for our building custodian, due to the fact that it is automatically operated by the Dunham differential control, and the early hours in the morning does not require the presence of an individual to operate it as our old heating system did.

The temperature throughout the whole building can be maintained quite closely without the regulating of the fire at all times, and finally as you will notice, its first year of operation has caused a decrease of 37% in fuel consumption, and this report is made in veiw of the fact that the winter just passed has required considerably more heat than that of last year.

There may be many heating systems as good as this, but we are entirely satisfied with the operation of this one, and as we made further additions to our building, a Dunham heating system will surely be stipulated in the contract.

Yours truly,

EFG/VL. E. Floyd Greer

Look for the Name

DUNHAM

This nameplate identifies a genuine DUNHAM Radiator Trap



U. S. Patent No. 1644114. Additional patents in the United States, Canada, and Foreign Countries now pending.

Over eighty branch and local sales offices in the United States, Canada, and the United Kingdom bring Dunham Heating Service as close to you as your telephone. Consult your telephone directory for the address of our office in your city. An engineer will counsel with you on any project.

We invite inquiries regarding the Differential Vacuum Heating System from Superintendents, School Boards, Architects, and others who are interested in greater efficiency and lower fuel costs in school heating.

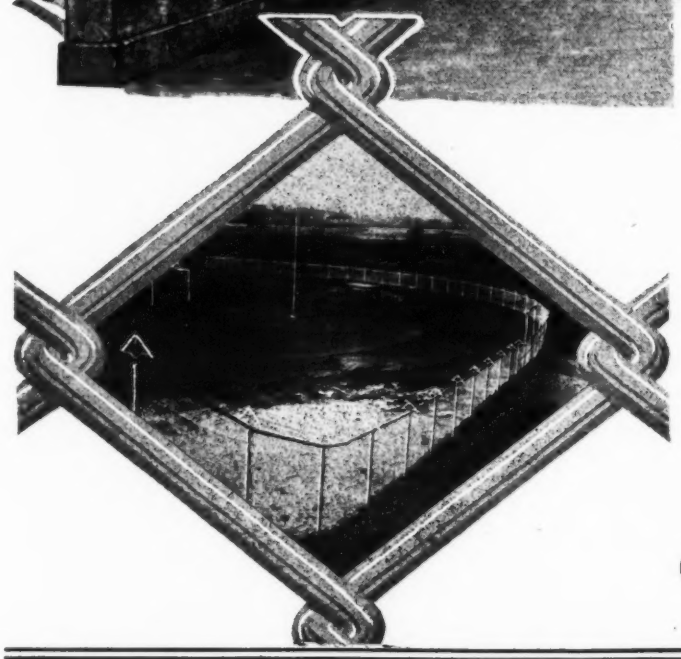
C. A. DUNHAM CO.

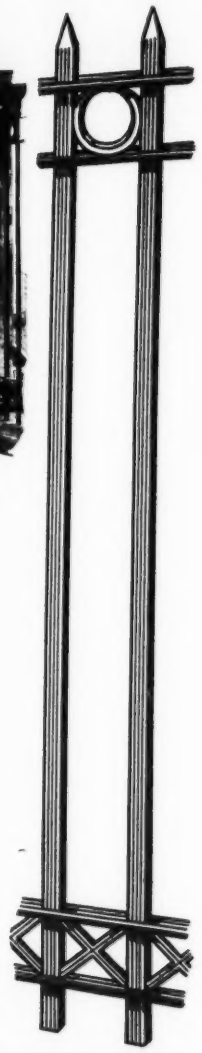
DUNHAM BLDG.

450 East Ohio Street, Chicago

Fencing School Property







For more than 40 years, the fencing of school property — school grounds, stadia, athletic fields — has been an important part of Stewart business. The experience thus gained enables the House of Stewart not only to supply high-grade iron or wire fence in great variety, but also to render a valuable service both as consultants on fence problems and as erectors of good fence. It will cost you nothing to ask Stewart for counsel.

Have you the Catalog—or shall we send it?

The Stewart Iron Works Company, Inc.

420 Stewart Block Cincinnati, Ohio

Stewart FENCE

Representatives in All Principal Cities

(Continued from Page 114)

a) To provide every child with a full-day session.

b) To remove all pupils from rented quarters totally unsuited to their needs and requirements.

c) To remove all pupils from damp, poorly lighted basement rooms.

d) To eliminate as early as possible the risk of fire danger in three-story elementary schools which were built 50 years ago of highly combustible materials.

e) To provide each pupil with the full advantages of education in classrooms in which there are not over 40 pupils.

f) To require no pupil to attend school in cheaply built and equipped temporaries, except as a temporary expedient.

g) To provide for growth in school membership in each budget.

Eighth Standard Type

The immediate result of these policies, was the development of the Detroit standardized elementary-school plan. The first building erected under the new policy was the Keating (1919), which was the first Detroit elementary school to be built around the exact needs of an enriched curriculum. The standardization consisted of (1) a design such that these schools could be erected in units that could be enlarged as the need arose; (2) standard classrooms (22 by 30 by 12 ft.) to house 40 pupils[2] as experimentation had proved best; (3) built-in equipment in each classroom; (4) a 14-ft. main corridor with 10-ft. side corridors; (5) elimination of the cloak closet and use of individual hall lockers built into the wall; (6) the building of toilets on each floor; (7) a library[3]; (8) a school lunchroom, and (9) inside play courts.

[2]Maximal elementary class size adopted by board of education as a policy in 1919.

[3]First introduced in 1883 but dropped about 1900.

The standardization of corridors and classrooms has resulted in the saving of much building area in each case, and in the long run, of operation expense. Prior to 1919 there had been no absolute standard for classroom size. These varied with the building.[4] In the Amos, the classroom area is 768 sq. ft.; in the Monteith, 805 sq. ft.; in the Crossman, 736 sq. ft.; and in the Pattengill, a platoon building, 660 sq. ft. This is a saving of 145 sq. ft. per classroom compared with the Monteith, and 76 sq. ft. compared with the Crossman.

School	*Width*	*Length*	*Height*	*Area*	*Cubage*
Amos	24 ft.	32 ft.	14 ft.	768	10,752
Webster	22 ft.	30 ft. 6 in.	14 ft.	771	10,794
Beard	22 ft.	35 ft.	13 ft.	770	10,010
Campau	23 ft.	32 ft.	14 ft.	736	10,304
Alber	23 ft.	31 ft.	14 ft.	713	10,062
Fairbanks	22 ft.	31 ft. 6 in.	12 ft.	693	8,316
Monteith	23 ft.	35 ft.	13 ft.	805	10,465
Angell	22 ft.	30 ft. 6 in.	12 ft.	671	8,052
Crossman	23 ft.	32 ft.	13 ft.	736	9,568
Hely	22 ft.	32 ft.	12 ft.	704	8,448
Pattengill	22 ft.	30 ft.	12 ft.	660	7,950

The cubage savings are also large. The average cubage per Webster classroom is 10,752 cu. ft., in the Hely, 8,448 cu. ft., and in the Pattengill, only 7,950, a saving of 2,902 cu. ft. over the Webster and 498 cu. ft. over the Hely. This means a saving of millions of dollars in construction costs to the city of Detroit, when ultimately translated into a building program covering a period of years. It will also mean the ultimate saving of thousands of dollars annually in operating costs by cutting down excess heating volume and cleaning area.

Landscape design. A definite policy was established also in respect to elevations and grounds. The board has adopted a policy which practically states that a school building should not only serve educationally, but also artistically—that it should be as attractive as skillful landscape design can make it. A survey made when this policy was adopted showed that only one school, the Jones, was in Class A, as typical of what a school-building exterior and surroundings should be.[5] The work in landscape design was incorporated in the architectural department of the board of education. In the erection of new buildings the development of the grounds has been included in the specifications.[6] Old buildings are being beautified as quickly as appropriations permit.

Pattengill School. The first of the new platoon plans was a basement, two-story type, and the first complete building evolved under this plan was the Pattengill, a 48-section unit.[7]

The Pattengill is a closed-court type building in which the two inner courts are used for play area, protected against snow and rain by awn-

[4]Typical variations in classroom area and cubage are these:

[5]The Detroit Educational Bulletin, Vol. 4:3, pp. 7-10, and Vol. 10:9, May, 1927.

[6]Dustless Playgrounds. The following specifications are in use: *Surfaced playgrounds.* Material for surfaced playgrounds as indicated shall be furnished and playground constructed as specified. *Preparation of Grounds.* All grass, weeds or humus material shall be removed from playground area, and if fill is necessary, only good soil or cinders free from dirt or ashes shall be used. The finished grade shall be as shown on plan, and any excavation or fill necessary to obtain this grade shall be done as directed. All surplus earth shall be removed when and as directed. *First Course.* Cinders not to exceed two inches in diameter and free from dirt or ashes shall be spread to a depth of three inches, wet, and rolled with a suitable roller until no wave forms in front of roller. The finished grade of this course shall parallel the finished grade of the finished surface. This course shall be wet before the second course is applied. *Second Course.* This course shall consist of 2½ inches of limestone screenings and dust spread evenly over the first course. This course shall be rolled with a suitable roller and sprinkled between rollings until a smooth, compact surface is obtained. Calcium chloride (Wing and Evans, or its equal), shall be spread evenly on surface, 1½ lb. per square yard, according to the manufacturer's specifications. Care shall be taken that it does not touch any lawn or shrub area. *Supervision.* Material and workmanship shall pass the inspection of the landscape architect for the board of education or some person authorized by him to approve the same. Contractor shall notify the landscape architect at the time he commences work.

[7]Provides for 1,920 pupils in regular organization, exclusive of kindergarten and special rooms.

(Concluded on Page 120)

5 out of 6 have it

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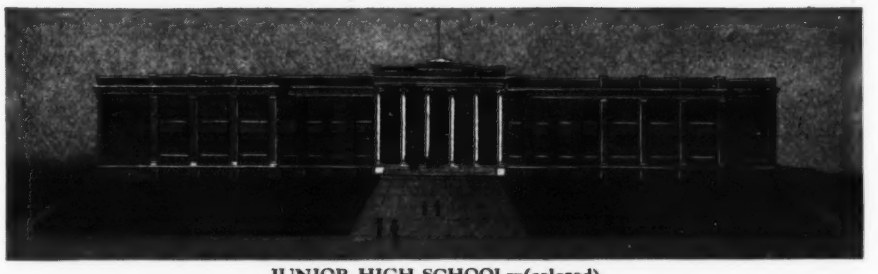
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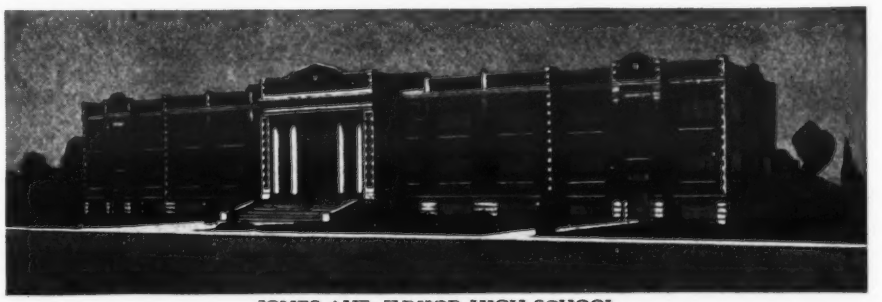
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Nashville, Tenn.
Henry C. Hibbs, Architect, Nashville, Tenn. Two 7,900 sq. ft. capacity Down Draft boilers. Standard Engineering Co., Heating Contractors, Nashville, Tenn.



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Nashville, Tenn.
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JONES AVE. JUNIOR HIGH SCHOOL
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Geo. D. Waller, Architect, Nashville, Tenn. One 13,500 sq. ft. capacity Down Draft boiler. Gowans-Hailey Co., Heating Contractors, Nashville, Tenn.

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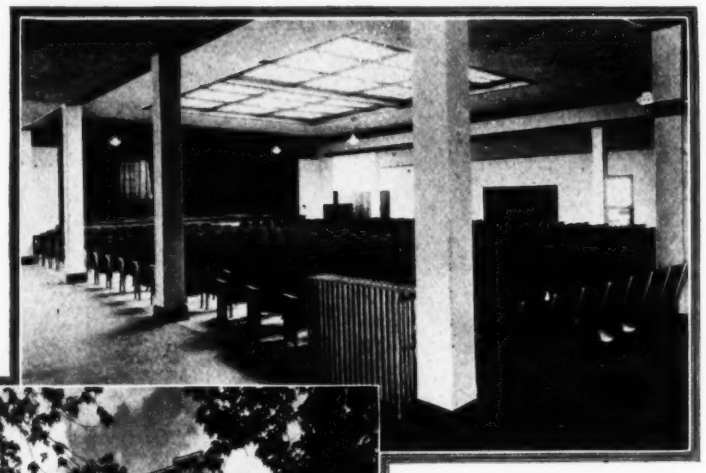
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High School



The Study Hall



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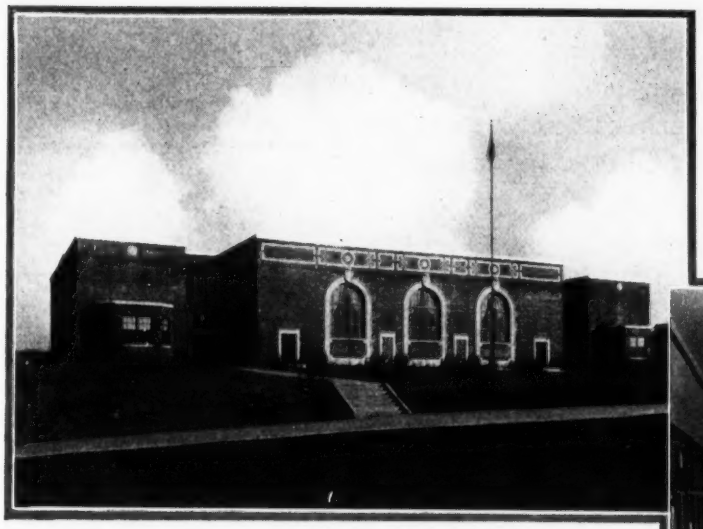
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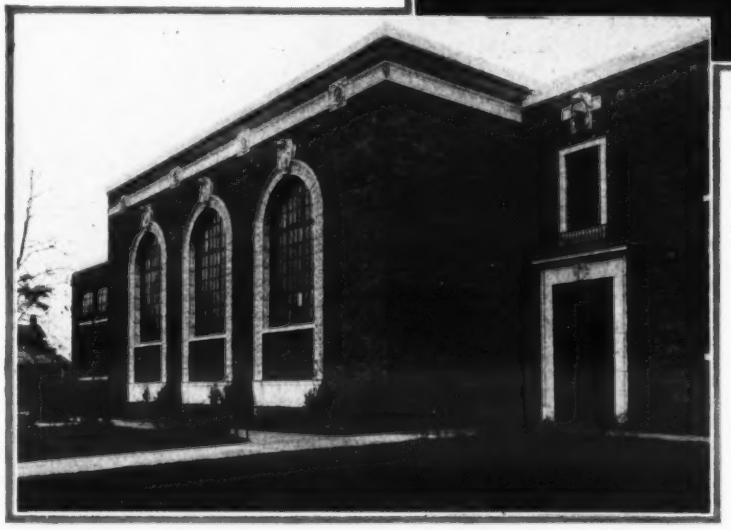


Front Elevation, H. V. Hotchkiss School
Architect: M. M. Konarski, Akron, Ohio
Heating Contractor:
Zindle Plumbing & Heating Co., Akron, Ohio

Akron, Ohio also installs Buckeye Heatovents in its New School Buildings, to insure controlled Ventilation



Kindergarten Room
Spicer School,
Akron, Ohio.
Architect: M. M. Konarski,
Akron, Ohio
Heating Contractor:
Zindle Plumbing &
Heating Company,
Akron, Ohio



Spicer School,
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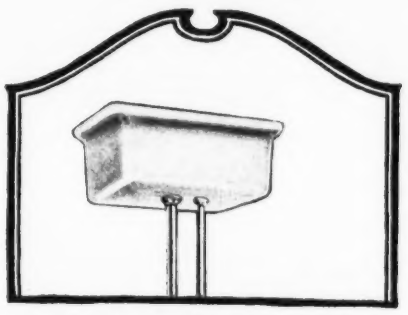
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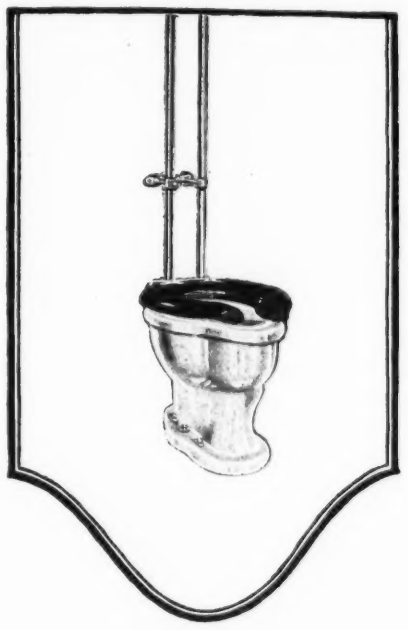
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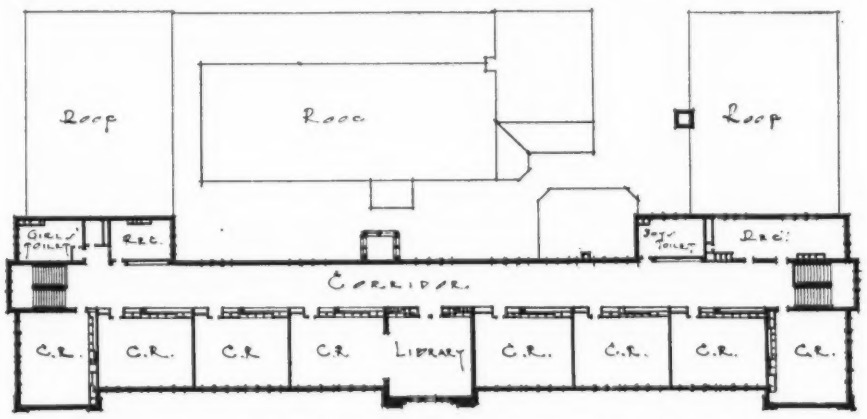


ings. The basement contains five classrooms, manual-training, household-mechanics, mechanical-drawing, sewing, and domestic-science rooms, a lunchroom, gymnasium, shower and locker rooms. On the first floor are kindergarten, two open-window rooms, administrative quarters, clinic, toilets, auditorium, 13 classrooms, toilets, and teachers' restroom. A library, 16 classrooms, drawing room, and toilets are on the second floor.

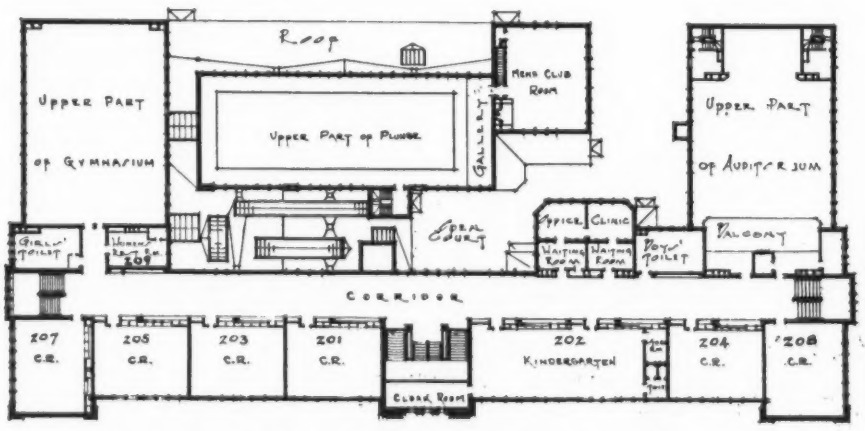
The Balch School. The first grade-level building to be completed, although not on the standard plan, was the George W. Balch school in 1921. This is an unusual type and includes many community features that do not appear in other buildings. The Balch school is built on the front end of a large athletic field and is equipped for football, baseball, tennis, and track.

Provision was made for community features, including a large swimming tank and a men's and women's clubroom. The building is so arranged that gymnasium and auditorium may also be used by adults in the evening. This is the most modern expression of the dual character of the public school, available for the children during the day and planned to meet the adult neighborhood needs in the evening. It is a development that will be strongly marked in future building plans.

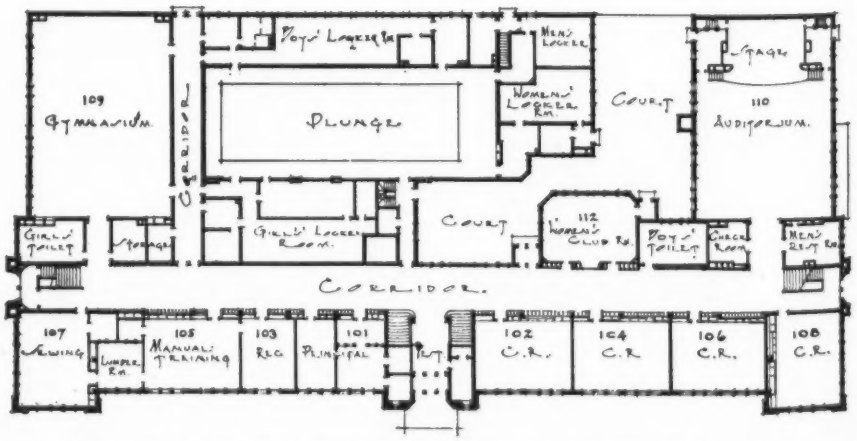
(Continued in February)



SECOND FOOR PLAN, BALCH SCHOOL, DETROIT, MICH. (Built in 1921)



FIRST FLOOR PLAN, BALCH SCHOOL, DETROIT, MICH. (Built in 1921)



GROUND FLOOR PLAN, BALCH SCHOOL, DETROIT, MICH. (Built in 1921)



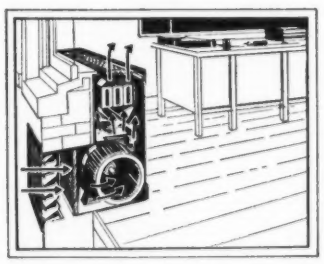
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THE PROGRESS OF SCHOOL ENROLLMENT IN CHIGAGO SCHOOLS

Don C. Rogers

The general level of education—as shown by amount of schooling—has been markedly increased in America. In 1840 the average American had the equivalent of a third-grade education. By 1915 the average had been raised to sixth-grade. Today, in all probability the average (median) Chicagoan is an eighth-grade graduate. It is not at all unlikely that by 1948 a majority of citizens of Chicago will be high-school graduates.

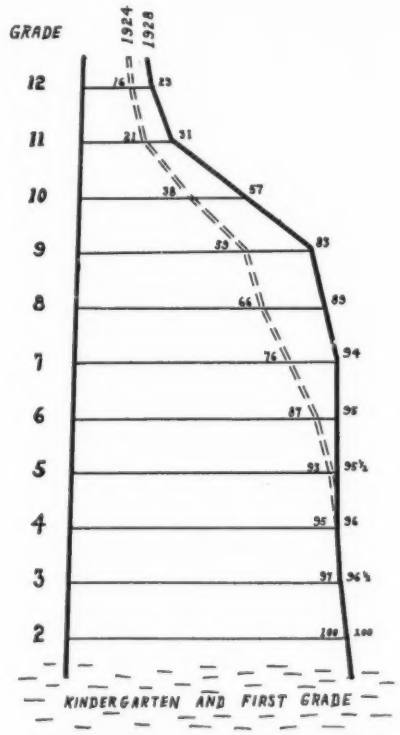
The public-school system can be likened to a ladder up which children climb toward an education. Each rung is a grade. The rungs grow shorter nearer the top, because children have dropped out. The ladder tapers in beginning at the sixth grade (where the compulsory-attendance law permits some children to quit school). The ladder tapers a good deal at the upper four rungs (the high-school period) where it is usually a voluntary matter whether the child continues to stay in school.

It is interesting to note that Chicago's educational ladder is growing wider at the top, as more and more children are staying on to attend high school.

In the history of the Chicago public schools there is nothing more striking than the extraordinary increases in secondary-school enrollment—in grades 7 to 12 inclusive. Between September 1924 and September 1928 there was an increase of 39,184 pupils in grades 7, 8, 9, 10, 11, and 12. Only 8,000 of these are attributable to the growth in the population of the city, and 31,000 apparently represent children who formerly would have dropped out but who are now staying longer in school.

Educators are wondering what cause lies behind these increases. Four years ago it was predicted the junior high schools, newly launched in Chicago, would induce children to remain longer in school. Others have said it is a new attitude toward education growing out of the world war. The claim is also advanced that the unparalleled prosperity of the American people has permitted greater schooling.

What are some of the effects of this tremendous increase in secondary-school enrollment? First of all, it seriously complicates the school-building program. There are 7,600 more pupils enrolled in high schools this year than last year—and 21 of Chicago's 24 high schools were already seriously overcrowded last year.



CHICAGO'S EDUCATIONAL LADDER
For every 100 pupils in second grade in 1924 there were 16 pupils in the twelfth grade. For every 100 pupils in second grade in 1928 there were 23 pupils in twelfth grade.

It seems evident that the school authorities will have to give foremost attention to the housing of secondary-school pupils by building more junior and senior high schools, especially since there has been no increase at all during the past four years in elementary-school enrollment.

Secondly, it means a greater strain on public finances. If the children stay longer in school it costs more money. Especially is this true if they are attending high school.

The average cost to maintain a Chicago child in school for a year is $89 for the elementary school, $108 for the junior high school and $149 for the senior high school. It costs approximately $500 per pupil to build and equip an elementary school, $850 per pupil to build and equip a junior high school and $1,000 per pupil to build and equip a senior high school. Thus, the increased enrollment occurs where the cost is greatest.

Since the Chicago educational and building fund revenues are totally inadequate now, this problem is a source of great worry to the superintendent of schools and the board of education trustees.

CHICAGO CORRESPONDENCE

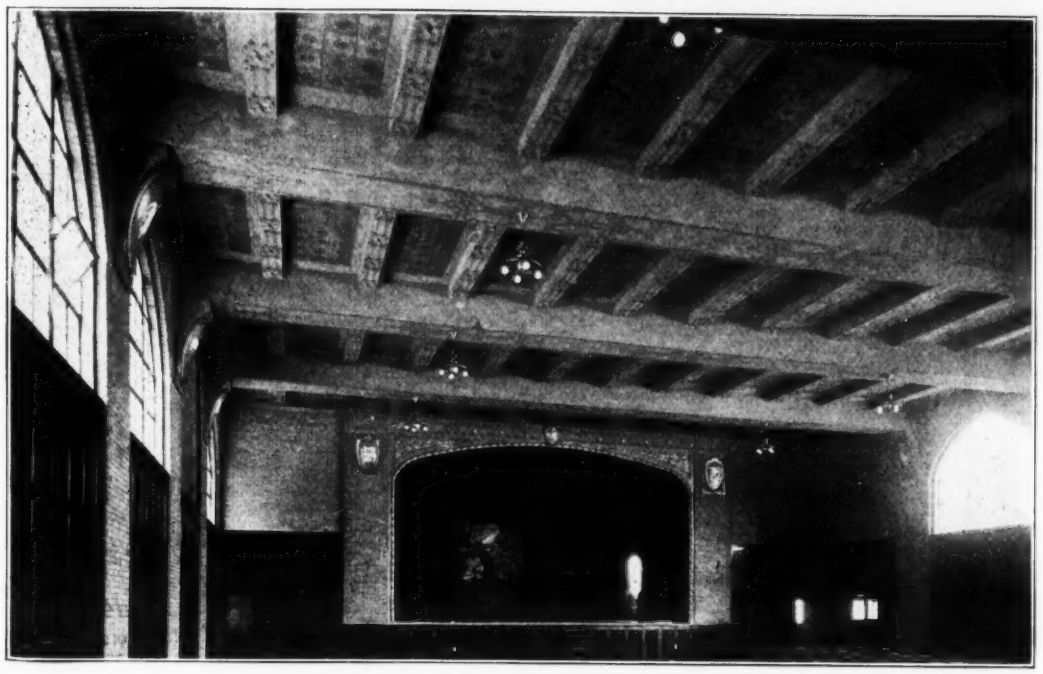
Over two thousand Chicago teachers held a reception and banquet at the Palmer House, on December 7, to honor Mr. William J. Bogan, superintendent of schools. The affair was held under the auspices of the teacher organizations affiliated with the American Federation of Labor, namely, the Chicago federation of men teachers, the federation of women high-school teachers, and the elementary-teachers' union.

Jane Addams was one of the speakers. Others included Victor Olander, Elmer Stevens, Charles B. Stillman, James A. Meade, Lucie H. Schacht, H. Wallace Caldwell, and Mr. Bogan.

Charles B. Stillman, vice-president of the American Federation of Teachers, and a teacher at Lane Technical High School, presented a ringing proclamation on the objectives of the A.F.T. He enumerated three things opposed by his group: (1) Inspectorial supervision, (2) overcrowded classrooms, and (3) the factory idea of education with its mechanization and standardization. The affirmative planks in the A.F.T. platform were announced: (1) Elective school boards, (2) an adequate pension system, (3) sabbatical leave, (4) adequate salaries, (5) reduction of clerical work for teachers, (6) life tenure, (7) cooperation between teachers and administrators. Mr. Stillman said he "confidently expected to have teachers' councils restored in Chicago."

Professor Thomas C. Chamberlain of the University of Chicago faculty, recently died at the advanced age of 85 years. Although a savant in several scientific fields, Dr. Chamberlain is perhaps best known for his "planetesimal hypothesis" which

(Concluded on Page 124)



St. John's Parish Hall, Canton, Ohio. Acousti-Celotex adds beauty to the ceiling and eliminates disturbing echoes and reverberations. George P. Little Company, Acousti-Celotex Contractor.

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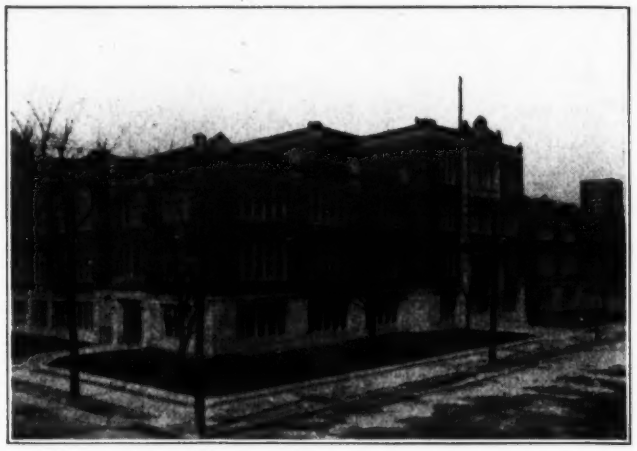
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(Concluded from Page 122)

practically swept away the "nebular hypothesis" which held sway for many decades.

It seems almost sacrilegious to follow the above paragraph with the statement that certain sports-loving alumni of the University of Chicago have been clamoring in the newspapers for a lowering of scholastic requirements so that bigger and better football teams may bring "honor" to their Alma Mater. Voiced by a well-known big-ten referee, the complaint is made that high entrance requirements at the University of Chicago act as a bar to promising grid material.

Four and six-tenths per cent of the people of Chicago are said to be illiterate!

Editorial comment by one of the Chicago newspapers: "If the three R's could be shot into our illiterates from a syringe, how pleasant that would be! Unfortunately, it is not so easy. Education is complicated; education is expensive; education is a long process."

Last year the teacher-clerks in the principals' offices were supplanted by 60-day civil service clerks. Recently, after a year's trial of the new plan, the Chicago principals' club conducted a questionary of its entire membership. "The results gave overwhelming evidence that principals do not approve of a civil service régime, and that they do desire a return to the teacher-clerk plan."

After a series of twelve victories and no defeats, the football team of Tilden Technical High School not only won the public-school championship for 1928, but in a post-season game with the DePaul High School, took undisputed city honors and was presented with the H. Wallace Caldwell trophy.

The Illinois state federation of labor has recently come out in favor of personal freedom of the teacher. Apparently the press is conservative in indorsing the move.

The Herald-Examiner states editorially, "Public opinion everywhere demands, and must continue to demand, that teachers, because of their close relationship to young people, and their undoubted influence, should be particularly careful in their conduct and even in their appearance. A teacher who appears drunk, or disorderly, in the classroom does more harm to decency than a business man who appears drunk, or disorderly, in his office."

After an exposition along the same line, an editorial writer for the Chicago Daily Journal ventures to say, "If she (the teacher) holds opinions she can't keep to herself, or insists on public conduct—like smoking—that the community abhors, the only way she can maintain her freedom is by exercising the right to go elsewhere."

The people of Chicago have become aroused over the fact that liquor "speak-easies" have been discovered operating near high schools and selling gin and moonshine to schoolboys.

At a meeting held in the city club of Chicago, Superintendent Bogan stated, "There is no denying that many of these dens of demoralization exist near some schools. The school authorities are trying to cope with the problem, but what can we do regarding the time pupils are not in school? Parental vigilance is needed to help us eliminate such places."

At the same meeting, Mr. H. Wallace Caldwell, president of the board of education, stated, "I have interviewed the chief of police and the prohibition officers regarding closing gin parlors near schools. But while they pledge cooperation, the real closing of such places depends upon the policemen on the beats, and I could take you out tonight and show you hundreds of places in Chicago where police officers and prohibition officers are being paid for allowing these places to run."

Police Commissioner Russell, through the newspapers, demanded proof, or an apology, from Supt. Bogan and President Caldwell. Mr. Bogan replied, denying that he had criticized the police, and a list of 37 places where violations of the liquor law were going on. It is alleged that these were raided and liquor found in 21 of the places.

Editorially the Herald-Examiner charged the commissioner of police with an attempt to pass the buck by his demands on the school authorities for "proof." "If the police did not know these gin parlors existed, what was that but inefficiency? If they knew and did not report the existence of these shops, why not? That they did know is proved by the fact that policemen were seen in them." The following week a huge shake-up took place in the police department and 469 policemen were transferred.

The long-anticipated finance dilemma of the Chicago board of education reached its crisis on December 4, when the teachers' pay checks were due, and there was no money in the school treasury. For two days there was city-wide suspense before temporary relief was provided and the pay checks issued.

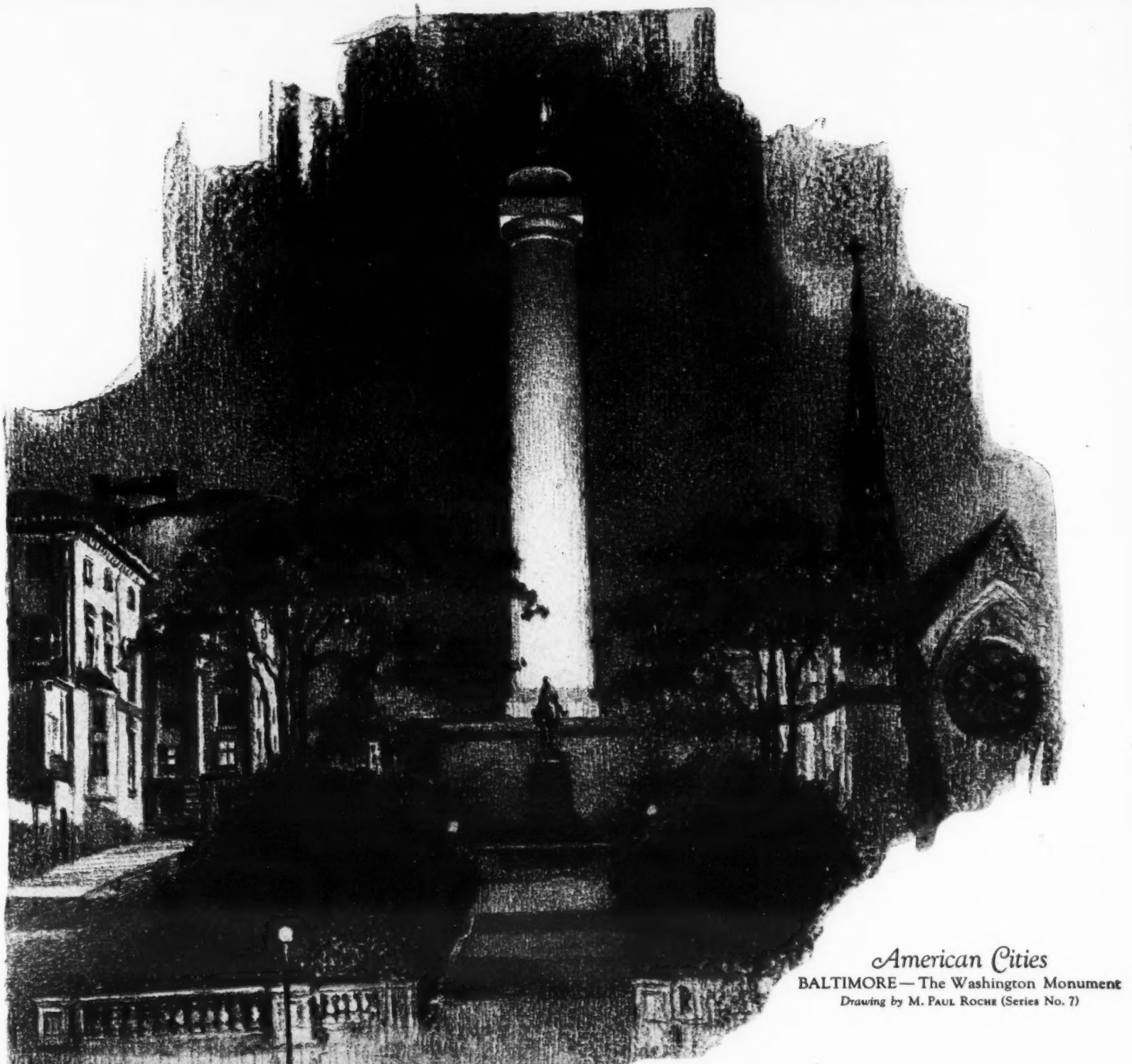
President H. Wallace Caldwell told the 2,000 teachers assembled at a banquet to honor Supt. Bogan next day after they finally received their pay, that he had been through two weeks of nightmare. Confidently expecting $6,700,000 would be turned over to the schools during the month of December, he was suddenly notified that there was a total of only $700,000. It was up to him to raise $6,000,000 in two weeks' time. He did it in sixteen days' time.

Under the Illinois law, a school district may borrow up to a maximum of 75 per cent of next year's expected tax collections. The Chicago school board had borrowed about 60 per cent. However, because there are several thousands of tax suits filed and awaiting hearing this year, collections have not been coming in so fast, and the bankers would not loan the board of education beyond 60 per cent because they feared the loss and costs of collection would total about 15 per cent this year. The school board had plenty of assets, the untouched 25 per cent of expected revenues, but they were "frozen" and unattainable.

Mr. Caldwell made several pilgrimages to the city hall seeking relief, with the result that the mayor's advisory committee offered its help. Its personnel consisted of some of the city's financial wizards, for example, George M. Reynolds, Silas Strawn, William Wrigley, James Simpson, W. Rufus Abbott, John Hertz, Elmer T. Stevens, and Thomas E. Wilson.

Apparently there was a $12,000,000 deficit of school funds—that is, between December and next spring's collections. However, it was discovered that after the first of the year the city council can authorize borrowing on next year's expected collections, up to 75 per cent, and this will tide the schools over for a major portion of the year 1929. However, some form of permanent relief is imperative.

The problem was to get money for the December payrolls. After conferences between the city and county treasurers, the corporation counsel, the city council finance committee and the mayor's advisory committee, President Caldwell secured enough money to cover the December 4 payroll needs, and the checks were released on December 6. The money was loaned to the school board by the city of Chicago from certain funds in the city treasury.



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PERSONAL NEWS OF SCHOOL OFFICIALS

—The school board of Homestead, Pa., was reorganized on December 3, with Dr. Lawson as president. Miss Coughlin was reelected as vice-president, and Mr. P. H. McGuire was reelected as solicitor.

—Mr. George A. Dondero and Dr. J. S. Morrison, retiring members of the board of education at Royal Oak, Mich., were guests of honor at a banquet in the high-school cafeteria on December 4. Mr. G. B. Hartrick, president of the school board, acted as toastmaster, and the speakers were Mayor H. E. Storz, Supt. Frank Hendry, and Mr. Lee Campbell.

Mr. Dondero was elected a member of the board eighteen years ago, coming to the city shortly after graduation from Detroit College. Dr. Morrison has been a member of the same board for twelve years. At the close of the program, and in the presence of fifty associates, each of the retiring veterans in school service was given a signet ring, engraved with his initials and bearing the inscription: "From friends in School Dist. No. 6," with the dates of service.

—The school board of Manatee county, Florida, has reorganized for the school year beginning with January, 1929, with the election of the following members: Mr. W. J. Walker, Bradenton; Mrs. T. R. Robinson, Terra Ceia; Mr. J. C. Albritton, Myakka City.

—Mr. Joseph M. Gwinn, superintendent of schools of San Francisco, Calif., has been elected president of the California Teachers' Association.

—Mr. H. W. Langworthy, superintendent of schools at Gloversville, N. Y., has been elected president of the New York State Council of Superintendents. Mr. C. S. Wright of Lawrence, was elected vice-president, and Mr. E. L. Ackley of Johnstown, was reelected secretary-treasurer.

—Mr. R. M. MacNaught of Windham, N. Y., has been elected president of the New York State Association of District Superintendents. Mrs. Emma C. Chase was elected secretary.

—Mr. Edward V. Walton, supervising principal at Roselle, N. J., died at his home on November 5, at the age of 60.

—Mr. Harrison Lyseth of Augusta, has succeeded the late J. W. Taylor as deputy state commissioner of education in Maine.

—State Supt. John A. H. Keith of Pennsylvania has appointed a committee of six to prepare a program of state-wide parental education. The members of the committee are Mrs. E. E. Kiernan, Philadelphia; Mr. A. S. Hurrell of State College; Mr. R. R. Bridgman, Philadelphia; Mrs. Anna G. Green, Harold Holbrook, and Mr. A. W. Castle of Harrisburg.

—Mr. L. L. Beahm has been elected superintendent of schools at Canon City, Colo., to succeed Mr. O. B. Drake.

—Mr. W. G. Barsheney of Jackson, Mich., has been elected superintendent of schools at White Pigeon, to succeed Mr. A. E. Cross, who has resigned.

—Mr. C. I. Clark of Stambaugh, Mich., has been reelected as chairman of the Iron county chapter of the Red Cross organization.

—Mr. George R. Ray has resigned his position as supervising principal of schools at Darlington, Wis. Mr. Ray has gone to Madison, where he has purchased an interest in the Parker Teachers' Agency.

—Mr. George H. Chatfield has been appointed to the position of director of attendance of the New York City schools, at a salary of $12,500. Mr. Chatfield, who was formerly assistant director of the bureau, has been with the department since 1909.

—Dr. J. Freeman Guy, formerly superintendent of schools at Bellevue, Pa., has been appointed associate superintendent of schools at Pittsburgh. Dr. Guy, who will act as asociate superintendent in charge of elementary schools, takes over the work formerly handled by Dr. B. G. Graham. Dr. Guy grasped the opportunity of doing the work he really loves, and his record in the Bellevue schools indicates that he will be a valuable asset to the school system of Pittsburgh.

—Mr. R. W. House, principal of the Prospect High School at Prospect, Va., has been elected president of the state education association for the year 1928-29. Mr. House is a graduate of Emory and Henry College, and is principal of one of the largest rural consolidated high schools in the state.

—Mr. John D. Sage, member of the school board at Cincinnati, Ohio, died at his home in that city on December 4, after a brief illness. Mr. Sage was elected to the board three years ago and was a valuable member of that body. He took an active interest in all questions confronting the board of education, and his judgments were sound and decisive. He had served as a member of the building and finance committee and other committees of the board.

—O. B. Thorgrimson was chosen president of the Seattle, Wash., board of education to succeed the late Mr. E. Shorrock. Edward Lincoln Smith was elected vice-president. Dietrick Schmitz, a prominent banker, was named to fill the vacancy on the board.

—J. O. Bishop was reelected president of the school board at Burbank, Calif. Dr. Edward Butter was chosen vice-president and Superintendent Frank Henderson as secretary.

—Meriden, Conn. Mr. Benjamin H. McGar has been reelected chairman of the school board, and Mrs. Grace Merrill, secretary.

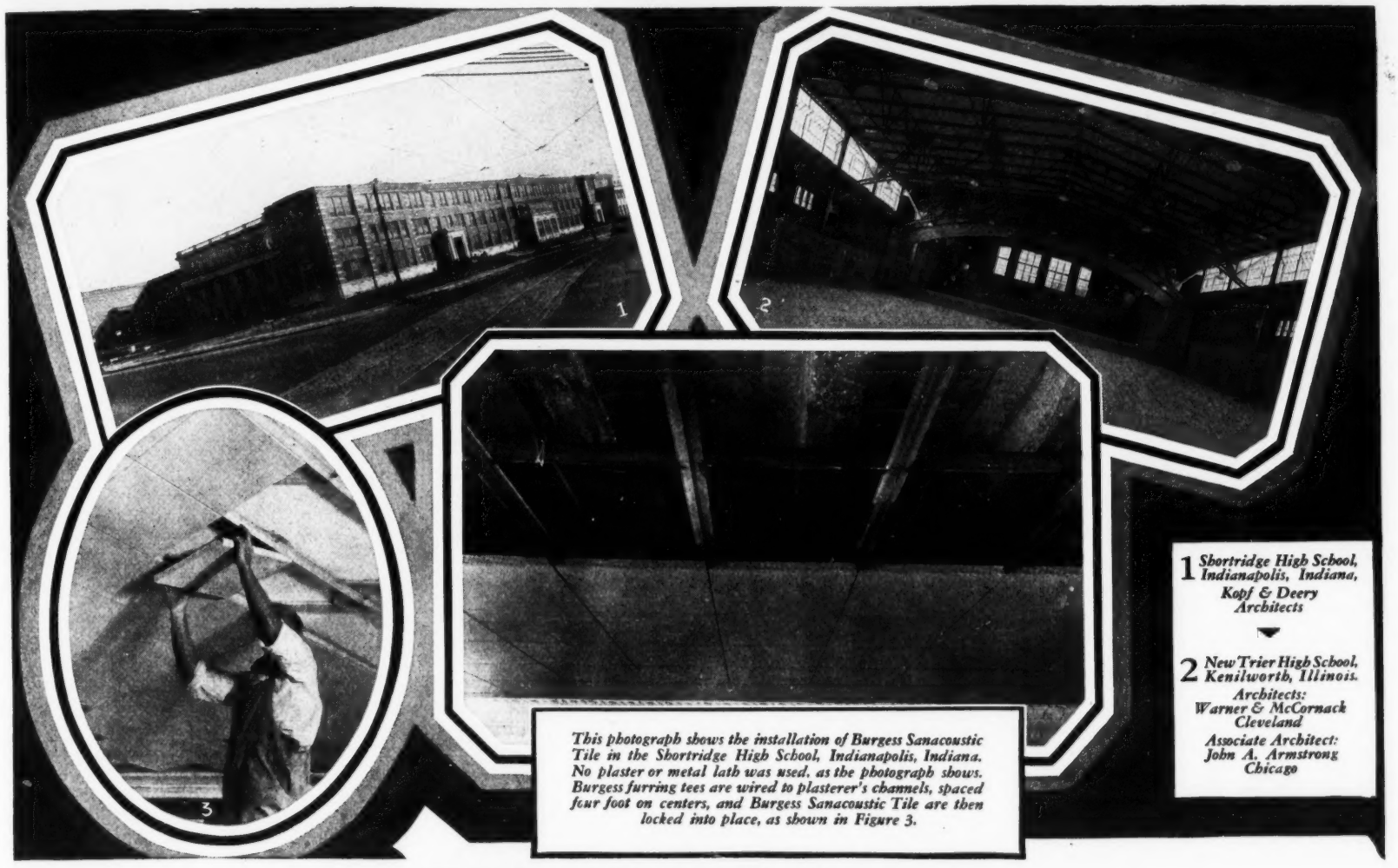
—Dr. C. S. Christie has been reelected as chairman of the school board at Warwick, R. I. Mr. F. A. Northup was elected clerk of the board, to succeed C. O. Carpenter.

—Mr. Marcus Aaron has been reelected as president of the school board of Pittsburgh, Pa. Mr. George W. Gerwig was reelected as secretary, Mr. Carl M. McKee as superintendent of supplies, Mr. James Bonar as superintendent of buildings, and Mr. Wallace Borland as treasurer of the board.

—Mr. Elmer H. Havens, for 26 years a member of the school board at Bridgeport, Conn., has been reelected as president of that body for another term.

—Miss Marion Snow has been appointed as a member of the school board at Falconer, N. Y., to succeed Mr. Glenn Crick.

—Mr. John A. Zurn and Dr. S. Warren Reichard were elected president and vice-president, respectively, of the school board at Erie, Pa., at the annual meeting held on December 3. Mr. Zurn has been active in the affairs of the board since his election five years ago and has served as vice-president during the past year. Dr. Reichard was elected three years ago and has been an invaluable member during the time he has served.



This photograph shows the installation of Burgess Sanacoustic Tile in the Shortridge High School, Indianapolis, Indiana. No plaster or metal lath was used, as the photograph shows. Burgess furring tees are wired to plasterer's channels, spaced four foot on centers, and Burgess Sanacoustic Tile are then locked into place, as shown in Figure 3.

1 *Shortridge High School, Indianapolis, Indiana, Kopf & Deery Architects*

2 *New Trier High School, Kenilworth, Illinois. Architects: Warner & McCornack Cleveland. Associate Architect: John A. Armstrong Chicago*

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University of Minnesota, St. Paul, Minn. —Auditorium.
Danville High School, Danville, Illinois—Auditorium.
Indiana U. Extension Division, Indianapolis, Indiana—Class Rooms and Office.
Indiana U. Medical School, Indianapolis, Indiana—
Shortridge High School, Indianapolis, Indiana—Auditorium and Library.
Carleton College, Northfield, Minn.—Severance Hall, Great Hall, Alcove, Corridors.
Janesville High School, Janesville, Wisconsin—Auditorium.
New Trier High School, Kenilworth, Illinois —Auditorium.
Whitewater High School, Whitewater, Wisconsin—Auditorium, Fan Room.
School No. 80, Indianapolis, Indiana—Auditorium.
Wausau High School, Wausau, Wisconsin —Auditorium.

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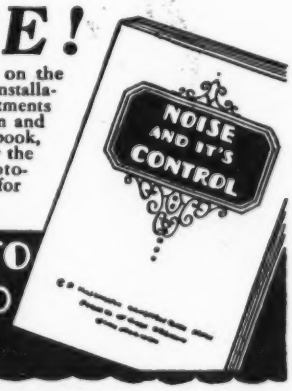
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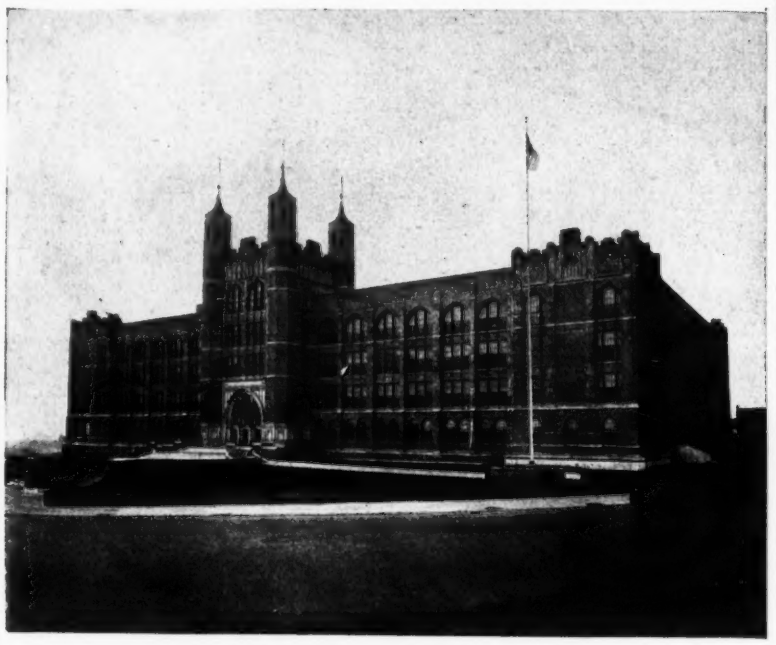
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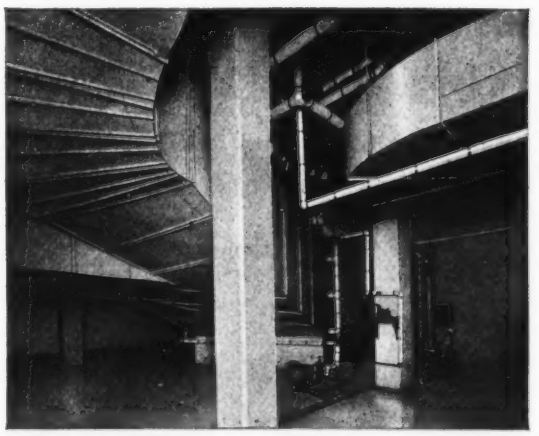
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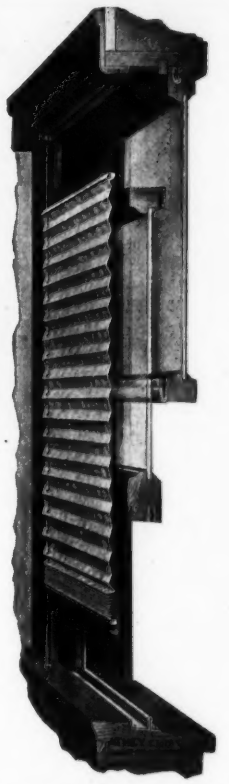
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PERSONAL NEWS OF SUPERINTENDENTS

—Arthur W. Wilson is the new superintendent of Orange county, Ind. He succeeds Harry Kirk who resigned.

—The schoolhouse needs of St. James, Minn., were discussed by Supt. L. M. Wikre in a public address made before the local Commercial Club.

—The Rotarians of Pontiac, Ill., listened to R. C. Moore, secretary of the Illinois State Teachers' Association. He said that out of 45,000 teachers in Illinois, 35,000 were members of the association.

—Louis C. Ward, superintendent of the Fort Wayne, Ind., schools was the principle speaker at the Van Wert county, Ohio, institute. His subject was "The Schools as a Socializing Agency."

—W. G. Ludlow, for six years principal of the high school at La Porte, Ind., has resigned. Miss Agnes V. Anderson has been named temporary principal.

—Supt. H. V. Calhoun of Belleville, Ill., has been elected as president of the Illinois City Superintendent's Association.

—Supt. William J. Bogan of Chicago, Ill., was the guest of honor at a banquet given by the teachers in the schools and attended by officials of the board of education and the educational department. Mr. H. W. Caldwell, president of the board of education, was the principal speaker.

—Supt. C. V. Haworth of Kokomo, Ind., has been named with a number of prominent educators to act on the Indiana committee for the revision of the state regulations governing teacher training.

—Mr. Robert W. Madden has been appointed as assistant superintendent of schools at North Bergen, N. J., to succeed Mr. Herman W. Wahlert.

—Mr. R. E. Pinkham has been elected as supervising principal at Weehawken, N. J., to succeed Mr. Frank Balch.

—Mrs. Anna L. Klein has been appointed to succeed Mr. J. F. O'Toole as supervising principal at Guttenberg, N. J.

—Dr. J. M. McCallie of Trenton, N. J., has become assistant superintendent of the State Home for Boys at Jamesburg.

—Mr. M. Ernest Townsend, formerly director of elementary schools at Trenton, N. J., has become assistant commissioner of education in charge of elementary schools for the state of New Jersey, succeeding Mr. R. L. West.

—Mr. E. F. Bunce succeeds Mr. Thomas G. Van Kirk as supervising principal at Metuchen, N. J.

—Mr. James L. Walker of Middletown, N. Y., succeeds Mr. Willetts as supervising principal at Hamburg, N. J.

—Mr. H. D. Pierson of Oxford, N. J., has assumed the supervising principalship at Belvidere, N. J. Mr. F. D. Munroe of Hazelton, Pa., succeeds Mr. Pierson at Oxford.

—Mr. L. R. McKusick has been elected superintendent of schools at Winsted, Conn.

—Supt. B. W. Spear of Gulf county, Florida, has been reelected for a four-year term. Mr. Spear began his duties on January 1.

—Mr. Ellis A. Manship of Spartanburg, S. C., has been elected as supervising principal of the Port Saint Joe High School, Gulf county, Florida, succeeding Prof. J. L. Watson, who has gone to Little Rock, Ark.

—Prof. M. P. Geiger has been reelected as principal of the Wewahitchka High School in Gulf county, Florida, for a second term.

—Dr. J. Freeman Guy, formerly superintendent of schools at Bellevue, Pa., has been appointed associate superintendent of schools at Pittsburgh, in charge of the elementary schools.

—Mr. William F. Kennedy, formerly director of platoon schools, Pittsburgh, Pa., has been appointed associate superintendent of schools, at a salary of $7,500.

—Dr. Graham, first associate superintendent of schools at Pittsburgh, Pa., has been made supervisor of the entire secondary department of the school system.

—Supt. R. D. Bowden of Glen Ellyn, Ill., has been reelected for a three-year term, at a salary of $5,000 per annum.

—Mr. Chester E. Gunn has been elected superintendent of schools at Jasonville, Ind.

—Mr. H. W. Langworthy, superintendent of schools at Gloversville, N. Y., has been elected president of the New York State Council of Superintendents. Mr. Charles S. Wright of Lawrence, was elected vice-president, and Mr. E. L. Ackley of Johnstown, was reelected secretary-treasurer.

—Supt. L. M. Farrin of Putnam, Conn., has been reelected as head of the school system for another year.

—Mr. G. C. Mason of Hicksville, Ohio, has been elected superintendent of schools at Chardon, succeeding Mr. McDaniel.

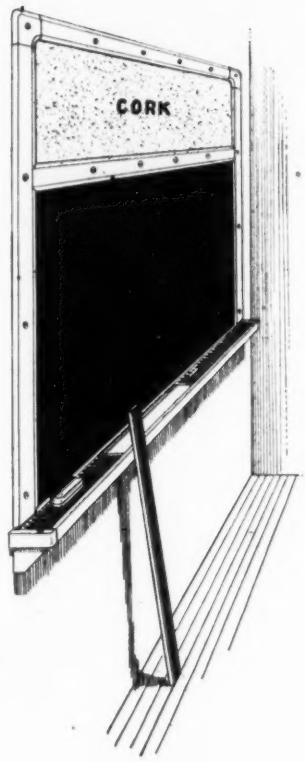
—Mr. William McAndrew of New York City has been awarded a life membership in the National Education Association.

—Miss Lydia A. Kirby, identified with the public schools of Philadelphia for more than half a century, and the first woman to be appointed assistant superintendent, died on November 5, at her home in that city. Miss Kirby, who was 90 years old was a graduate of the Girls' Normal School of Philadelphia, and began her teaching career as an instructor in the graded schools. Later, she became principal of the Lincoln Grammar School, and in 1881 was appointed teacher of methods in the city normal school. In recognition of her ability as an administrator, Miss Kirby was selected for the position of assistant superintendent of schools under former Superintendent MacAllister. Miss Kirby retired from active service in 1909, but had kept in close touch with the school affairs of Philadelphia.

—Mr. Edward V. Walton, for nine years supervising principal of schools at Roselle, N. J., died at a New York sanitarium on November 5. Mr. Walton was educated at Blair Academy, Blairstown, N. J., and at the Centennial Institute.

—Mr. Daniel R. Martin, principal of the George Pullman School, Chicago, for 45 years, died at his home in that city on November 5. Mr. Martin came to Chicago in 1878 to become principal of the Kensington School, the first public school in the city. Later, he became principal of the Pullman School, and as the town grew and branches of the school were built, he was made superintendent of the town school system.

—Mr. George A. Allen, Jr., of Frankfort, Kans., has been appointed state superintendent of public instruction. Mr. Allen is well known in Kansas educational affairs. He was county superintend-



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ent of Jackson county from 1905 to 1909, and assistant superintendent of instruction from 1910 to 1923.

—Mr. E. S. Stover of Rebersburg, Pa., has been elected superintendent of schools of Bloomfield, N. J., to succeed George Morris.

—Supt. F. H. Chandler of Sheldon, Iowa, has been elected president of the superintendents' division of the Iowa Teachers' Association.

—Supt. S. Gaiser of Sidney, Mont., has been elected president of the Eastern Montana Teachers' Association. Mr. Gaiser was for the past year chairman of the section for administrators and high-school principals.

—Mr. George A. Bowman of Chillicothe, Ohio, has been elected superintendent of schools at Marion, to succeed Mr. J. H. Mason. Mr. Bowman was released from his contract at Chillicothe, where he had entered upon his sixth year of service. The appointment was for a five-year term.

—Mr. E. S. Russell, formerly superintendent of schools at Simsbury, Conn., has become director of the teacher-training school at New Haven. Mr. Paul D. Collier of Port Arthur, Tex., has succeeded Mr. Russell as superintendent.

—Mr. R. W. Howey, first territorial superintendent of schools of Montana, died at his home at Harmon Springs, Ohio, recently.

—Supt. W. P. Gee of Davison, Mich., has been elected president of the Genesee County High School Association, a new organization formed at a meeting of superintendents and faculty members at Flint.

—Mr. S. D. Daw, superintendent of schools of Wellsville, Ohio, has been elected president of the Columbia County Schoolmasters' Association. Mr. H. C. Leonard was elected vice-president, and Mr. W. J. Springer secretary-treasurer.

—Mr. C. C. Nardin, formerly superintendent of schools at Wapakoneta, Ohio, died on November 20. The funeral service took place on November 22, with friends and acquaintances in the school field in attendance.

—Mr. Luther Trostle of Audubon, N. J., has been appointed supervising principal at Beverly, to succeed Miss Nettie Simpson.

—Mr. R. C. B. Parker of High Bridge, N. J., has been appointed supervising principal of the Mount Holly schools, to succeed Mr. E. F. Bunce.

—Mr. Paul Y. Eckert of Ocean Grove, N. J., has been appointed supervising principal at Palmyra, to succeed Mr. A. S. Griffith.

—Mr. Homer Bortner, formerly principal of the Middle Township High School of Cape May county, N. J., has resigned to become superintendent of schools at Millville. Mr. Eugene E. English has been appointed to succeed Mr. Bortner as head of the township high school.

—Mr. Harvey Smith, formerly superintendent of schools at Millville, N. J., is pursuing a professional course at Columbia University.

—Mr. Frank K. Koehler, formerly supervising principal of the Bushkill, Pa., schools, has been elected as supervising principal at National Park, N. J., succeeding Mr. J. H. Bodge.

—Mr. John R. Reider, treasurer of the school board of Harrisburg, Pa., died at his home in that city on November 9, after a long period of ill health. Mr. Reider was appointed a member of the board in January, 1906, to fill a vacancy on the board. He was elected treasurer of the board in 1918, and was at one time chairman of the building committee of the board.

—Mr. James S. Fleck, vice-president of the school board of Altoona, Pa., died recently, after serving less than a year of a new six-year term to which he had been elected at the last municipal election. The school board has been asked to appoint a successor who will serve until the first Monday in December, 1929.

—Mr. Raymond S. Jewett, a member of the board of education at Mt. Vernon, N. Y., and a former president of that body, was elected president of the Associated School Boards and Trustees of New York State, at their annual meeting held on October 1 and 2, at Oswego. Other officers elected were: Mrs. Henry Danforth, Rochester, first vice-president; Mr. Harry J. Clark, Syracuse, second vice-president; Mrs. E. L. Robertson, Syracuse, secretary; and Mr. George H. Faulkner, Oswego, treasurer.

—The members of the school board at Jasonville, Ind., are: Mr. Leonard Hackstetler, president; Mr. Walter Bissell, secretary; and Mr. William Risinger, treasurer.

—Mr. Lewis L. Giddens has been appointed a member of the county board of education of Sumter county, Florida, to succeed Mr. W. W. Wharton, resigned.

—On November 6, all members of the board of education of Martin county, Florida, were reelected for two-year terms. Mr. Edward Mapp was reelected as county school superintendent for a term of four years. The board is composed of three members, Mr. F. W. Baker, Mr. G. D. Falk, and Mr. V. V. Wortham.

—On January 1, the board of education of Gulf county, Florida, was reorganized with the election of two new members. Mr. O. M. Morton of Port Saint Joe was elected a member of the board, to succeed Mr. B. W. Eells, and Mr. H. M. McQuagge of Parkwood was elected to succeed Mr. T. J. Kinard. Dr. Thomas Meriweather was reelected for another term.

—The school board of Winsted, Conn., has been reorganized with the election of Mr. E. L. Gay, Mr. G. W. Oliver, Mr. John E. Lynch, Mr. Harold S. Case, and Mr. R. V. Tiffany as members. Mr. W. G. Franklin was elected as chairman and Mr. E. L. Gay as secretary.

—The school committee of Providence, R. I., reelected Samuel E. Lincoln as chairman, and George H. Blackwell as clerk. William Potter is the new board member.

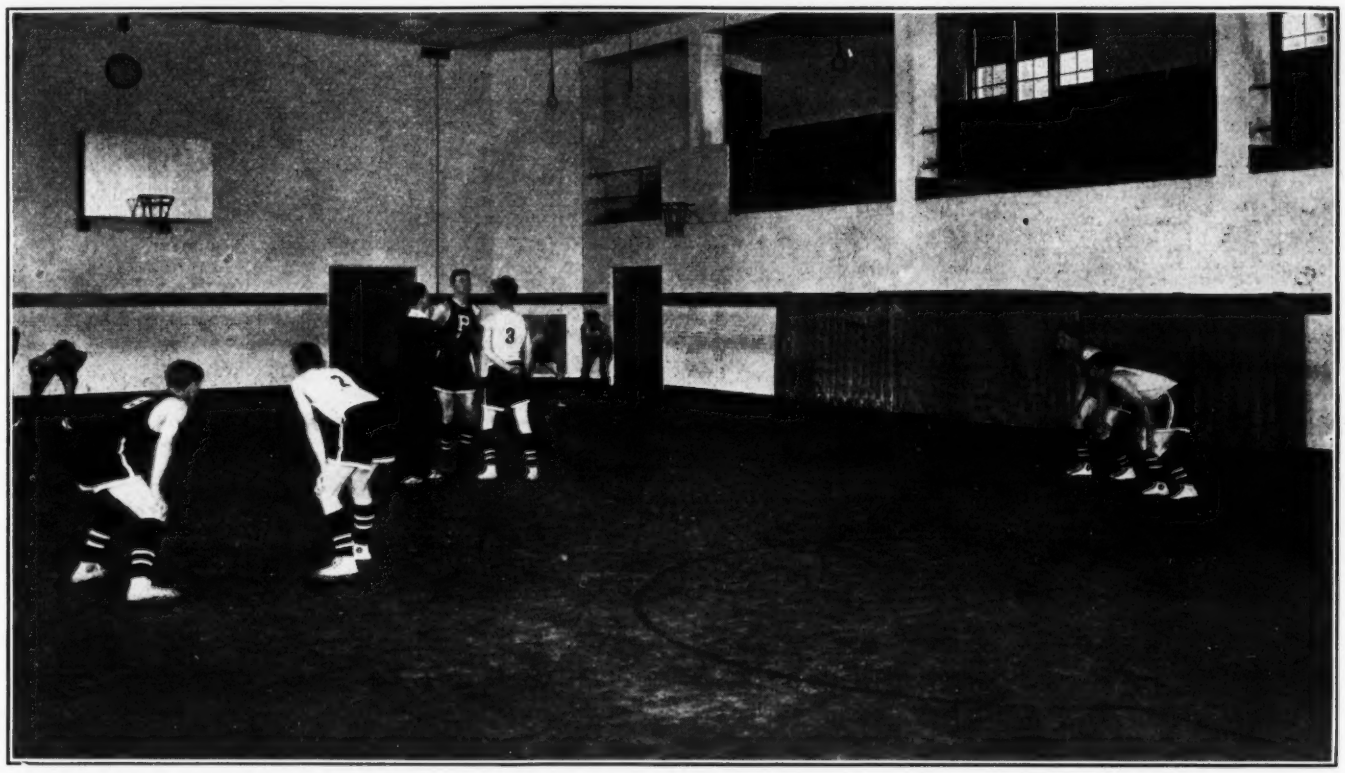
—J. Frank Marsh of Charleston, was elected president of the West Virginia Education Association. He succeeds Mrs. Bertha Filson, who was named vice-president. Next year's convention will be held at Huntington, W. Va.

—Augustus Ludwig has been elected president of the Schoolmasters' Club of New York City.

—Arch. M. Thurman, a high-school instructor of Salt Lake City, was made president of the Utah Education Association. C. Ray Evans of Coalville was elected first vice-president, and LeRoy E. Cowles second vice-president.

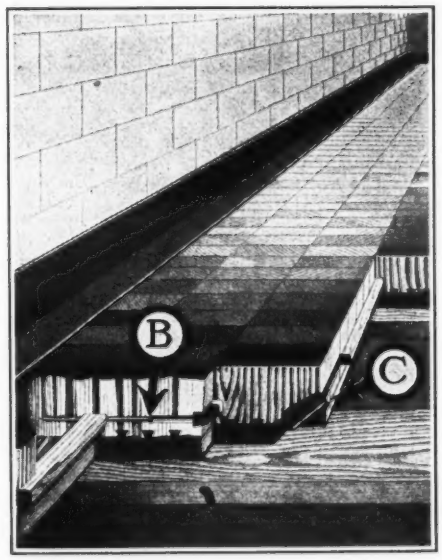
—William Doran of Hubbard was elected president of the Hubbard County School Officers Association. Other officers named were Knute Gradden of Laporte, vice-president; and Mrs. Mary Petre of Arago, secretary-treasurer.

—The Lawrence County, Mo., Community Teachers' Association elected the following officers: President, Floyed Ray, Mount Vernon; vice-president, Joe Barres, Marionville; secretary-treasurer, Miss Alva Pyle, Aurora.



A Bloxonend Floor in the gymnasium of the Roosevelt High School, Yonkers, N. Y. G. Howard Chamberlin, Architect.

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The method of laying Bloxonend illustrated above is recommended for gym use only. Nailing strips may be eliminated in shops, corridors, and classrooms.

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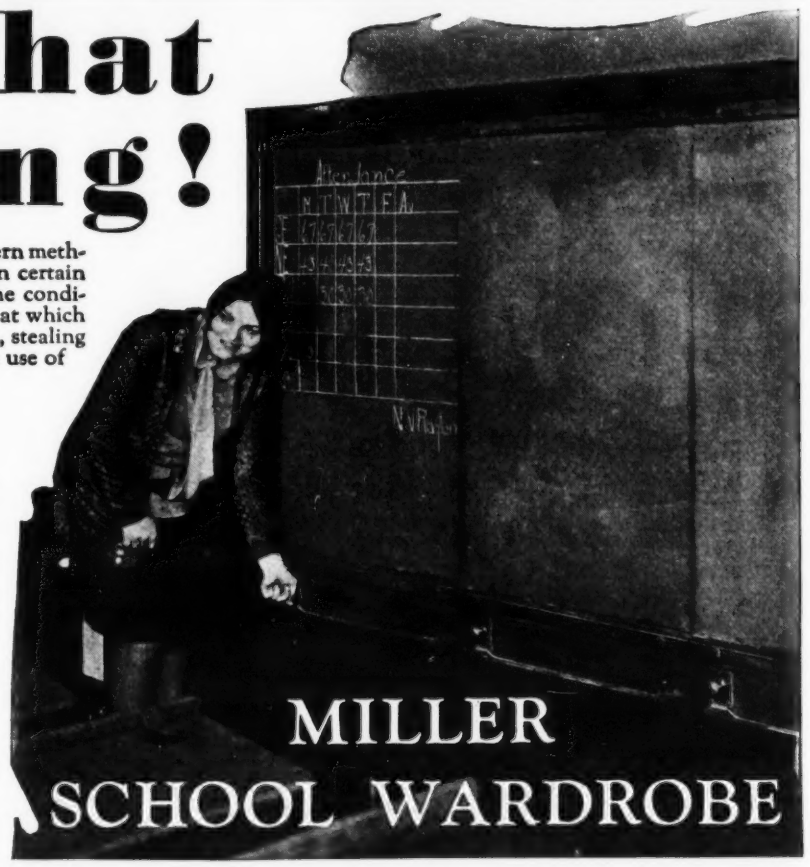
Stop That Stealing!

Private detectives... rigorous punishment... stern methods—all were unable to stop petty pilfering in certain old school houses of a Kansas metropolis. The condition resulted in a public indignation meeting at which school patrons complained to the board! Yet, stealing could have been practically eliminated by the use of

Miller School Wardrobes

in conjunction with the "home room system." With a Miller Wardrobe in the classroom, all pupils keep their coats, wraps, books, etc., under lock and key—one key controls the master lock on all doors—the teacher has the key and is responsible for the wardrobe. When she wishes, she can unlock all the doors with a single movement! This is the famous "single control" of the Miller School Wardrobe, so highly praised by educators everywhere. L. D. Kruger, principal of the Rosedale High School, Kansas City, Kansas, says that Miller School Wardrobes "completely stopped petty pilfering" in his school building. For booklet, photos, details, etc., write

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TEACHERS AND ADMINISTRATION

THE MOBILE SICK-BENEFIT AND ANNUITY PLAN

In past years, the paying of sick benefits and annuities to teachers received very little attention. The problem is beginning to be solved and is being brought down to definite rules and regulations for meeting the aims and purposes of the plan.

In Mobile, Ala., a teachers' association has been in existence for more than eleven years, and during this time has fulfilled its purpose in paying sick benefits and annuities to its members.

In recognition of the outstanding needs of the system, a definite method of providing funds was arranged. Under the plan, teachers who have taught less than ten years in the city or county, must pay one half of one per cent of their yearly salary to the association. Teachers who have taught twenty years and over must pay one and one-half per cent. The treasurer of the board of school commissioners regularly makes the deductions during each bimonthly period and turns the funds over to the treasurer of the Mobile teachers' association. In order to receive the benefits of the plan, each teacher is required to sign a clause in her contract to the effect that she is a member of the association and agrees to the salary deduction.

Under the provisions of the constitution, all salary deductions are used for sick-benefit and retirement allowances, which are paid according to a definite plan as follows:

1. A teacher who is sick two weeks or more in any school term, may receive a benefit of $7 a week during illness. This benefit may be continued for thirteen weeks, but no benefit will be paid for the first week's illness.

2. A teacher who has taught thirty years or more, may retire and may receive $365 annuity, payable in twelve monthly installments.

3. A teacher who has taught ten years in the county and who becomes incapacitated, may retire and receive an annuity of as many thirtieths of $365 as the number of years taught.

Under the arrangement, the board of school commissioners pays into the fund an amount equal to that which the association pays so that the total amount from both sources reaches a total of $60 per month. The board of education will pay a sick benefit during any calendar month in which the teacher has taught one or more days. An absent teacher loses only the amount paid to the supernumerary, which averages about one half of that paid to the regular teacher.

The Mobile teachers are proud of the association and are active in methods for the betterment of the profession. At present, they are looking forward with interest to a state organization which will afford some form of teacher-retirement allowance.

IS THE TEACHER-TENURE LAW ACCEPTABLE?

The teacher-tenure law in force in California is being watched with considerable interest. From a survey on the operation of the law made by Harry Bessac, superintendent of San Joaquin county, the rural districts oppose the law while the cities are divided in their conclusions.

In answer to the question "Has the operation of the tenure act in your county this last year been satisfactory to your teachers and county superintendents?" reported as follows:

	Counties
Satisfactory to teachers	8
Not satisfactory to teachers	28
Satisfactory to trustees	5
Not satisfactory to trustees	37
Satisfactory to principals	9
Not satisfactory to principals	25
Satisfactory to superintendents	7
Not satisfactory to superintendents	37

On the whole, teachers, principals, trustees, and county superintendents, felt that the law had not proved beneficial to the districts outside of the larger cities.

City superintendents reported as follows:

	Cities
Satisfactory to teachers	22
Not satisfactory to teachers	2
Satisfactory to boards of education	12
Not satisfactory to boards of education	15
Satisfactory to principals	14
Not satisfactory to principals	10
Satisfactory to superintendents	12
Not satisfactory to superintendents	15

In both groups there were a few who expressed themselves as finding the law partially satisfactory or as being uncertain in their conclusions.

THE ROCK ISLAND SICK-BENEFIT PLAN

—The school board of Rock Island, Ill., at its November meeting, adopted a sick-leave plan which has become a part of the teachers' salary schedule. The plan was adopted following a careful study by Supt. J. J. Hagan of sick-leave plans in operation in other school systems.

Under the rule governing the plan, teachers who are unable to attend to their duties because of sickness, or death in the immediate family, must notify the principal or superintendent at once, in order that a substitute may be secured to fill the place made vacant.

Teachers will be allowed full pay for five days' absence each year, such allowance to be cumulative to twenty days, but in case of sickness of more than five days, a doctor's certificate will be required where the conditions warrant it. Pay for time lost will be deducted at the time of disability, to be paid by semesters.

Where a sick leave is allowed during the first semester, five tenths of the amount will be paid at the end of that semester. The remainder will be paid at the end of the year, provided that, if the teacher drops out of the system before the end of either semester, she shall be paid in proportion to the time taught, counting one tenth of the sick leave due for each month taught. Full pay will be forfeited in all cases which are not covered by these rules.

TEACHERS' SICK-LEAVE BENEFITS AT PONTIAC, MICH.

The board of education of Pontiac, Mich., at its meeting on November 13, adopted a new plan for cumulative sick leaves for teachers who are forced to be absent because of illness.

The new plan provides that a teacher may be absent for certified illness not to exceed 10 days in any school year, without loss of pay.

The plan allows teachers not absent to accumulate the unused portion of the 10 days, up to a total of not to exceed 50 days. For instance, a teacher who does not miss a day for illness or other cause over a period of 3 years, will accumulate 30 days of unused sick leave.

(Continued on Page 134)

"Maple Flooring Superior *for* Modern Schools"

—WARREN S. HOLMES, *Architect*





High School, Mason, Mich. Warren Holmes—Powers Company. Architects, Chicago—Lansing

For few types of buildings must flooring be chosen with as great care and judgment as for the modern school building. Public money must be wisely spent. High standards of sanitation and health must be assured. Floors must be durable, resilient, easy to clean, untiring to youthful muscles.

From leading school superintendents and architects in localities throughout the country comes the opinion that Northern Hard Maple Flooring best fills the needs of educational structures. Typical of these opinions is the statement of Warren S. Holmes, well known architect with offices in Chicago and Lansing, Michigan.

Mr. Holmes says, "We elected to use hard maple for the floors in the Mason High School because we regard it as the most durable of school room flooring materials. It costs less in the long run than other floors and requires no repairs except for the replacing of the painter's finish from time to time."

"The one flooring material that combines health and economy"

Back of the widespread use of Northern Hard Maple in school buildings is the fact that here is one flooring material which combines warm, dry cushioning comfort with the qualities of lasting wear which school use demands.

This resilient flooring material is remarkably tough-fibred and tight-grained. It will not sliver or splinter. Scuffing, youthful feet and the moving of equipment simply make it smoother with time. Northern Hard Maple actually outwears stone!

Northern Hard Maple, moreover, because of its permanent smoothness, is exceptionally easy to keep clean. It offers no open lodging places for dust and germ-laden dirt to collect. And it permits quick, simple, permanent anchorage for seats.

Hundreds of schoolboards have been guided by these facts in selecting flooring. They have chosen Maple for schoolrooms, corridors, gymnasiums, assembly halls. Consult your architect about Northern Hard Maple.

Your retail lumber dealer can furnish **MFMA** Maple, Beech or Birch flooring, or he can get it for you.

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Holt Hardwood Company	Oconto, Wis.
Indiana Flooring Company, (Mill at Reed City, Mich.)	New York, N. Y.
Kneeland-Bigelow Company	Bay City, Mich.
Kneeland-McLurg Lumber Co.	Phillips, Wis.
Mitchell Brothers Company,	Cadillac, Mich.
Nichols & Cox Lumber Co.	Grand Rapids, Mich.
North Branch Flooring Co.	Chicago, Ill.
Northwestern Cooperage & Lumber Company	Gladstone, Mich.
Osgood & Blodgett Mfg. Co.	St. Paul, Minn.
Oval Wood Dish Corporation	Tupper Lake, N. Y.
Robbins Flooring Company	Rhinelander, Wis.
Sawyer Goodman Company	Marinette, Wis.
Soo Lumber Company	Glidden, Wis.
Stephenson, I. Co. Trustees	Wells, Mich.
Ward Brothers	Big Rapids, Mich.
Wells, J. W. Lumber Company,	Menominee, Mich.

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EARLY AMERICAN	AUTUMN BROWN	DOVE GRAY	PASTEL GREEN	SEAL BLACK
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Think of their Eyes!

When you plan a schoolroom, remember that 65% of America's school children have defective vision. Much of it is due to eye strain caused by faulty blackboard arrangement.

The ideal schoolroom is arranged with blackboards at the sides, green cork-carpet poster-board in front, and an "Alternator" centered on the poster board.

The Alternator is a swinging blackboard that works like a giant book—four "leaves" of eight "pages"—giving the teacher *eight individual blackboards* on which to write exercises and test questions. *Eighty-four square feet of blackboard space*, convenient to handle and display to the class!

With the Alternator, the teacher may prepare her blackboard lessons in advance and thus save time during the school period. The lessons and tests need not be exposed to the scholars until the proper time. To swing the boards in any position, the teacher merely gives a gentle push. The boards move freely, and stand in place at any angle where stopped.

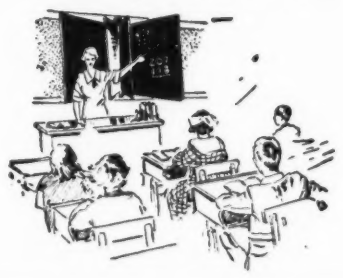
The Alternator saves time, enabling the teacher to keep lessons from day to day. It is easy to handle, as there is nothing to lift. And there is nothing to get out of order, for the patented swinging device always works perfectly!

With an Alternator and a poster-board in use, there are no light-reflecting slate blackboards lining the front of the room, into which the pupils must gaze constantly all day long, to the detriment of their eyesight. Instead they face the restful, green, cork-carpet poster-board and the "Alternator" (swinging blackboard) which provides all the blackboard space the teacher needs.

By specifying the Alternator, you can plan more efficient schools—better schools—schools that make the best use of the teacher's time—schools that save the pupils' eyesight.

For complete information, descriptive booklets, etc., write

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(Continued from Page 132)

If, however, a teacher should become seriously ill in the fourth year, such teacher will be allowed to be absent for 40 days, without loss of pay—10 days for the current year, and 30 days for the preceding 3 years.

Where a teacher has been fortunate to accumulate 100 days of unused sick leave, representing 10 years of uninterrupted attendance, she may be granted without loss of pay, 50 days of absence, representing 10 school weeks, for rest, travel, or study (but not for gainful occupation).

SICK LEAVES FOR TEACHERS

—The supply and demand of high-school teachers was recently discussed by Principal L. W. Williams of the University High School of Urbana, Ill. Admitting that there was an oversupply of teachers, Mr. Williams held that this was due to the fact that the general economic conditions were not good and had driven persons into the profession of teaching. "On the other hand," said the speaker, "the salary with which teachers start is relatively higher than salaries paid in other lines."

—Youngstown, Ohio. The board of education has proposed the adoption of a cumulative sick-leave plan, similar to that used in the Cleveland schools. Under the proposed plan, the ten days allowed each teacher annually will accumulate if not used, and at the end of six years, if the teacher has not lost a day, he or she will be entitled to sixty days' absence during one year. Under the present plan, teachers receive pay for ten days' absence annually, unless special dispensation is made by the superintendent and school physician.

—A study of the teacher turnover in Cincinnati, Ohio, was made recently by F. R. Jacobs of the Carson School of that city, and found that it was 6.6 per cent of the total number employed. The causes for resignations are enumerated in the order of frequency as follows: Marriage; to teach elsewhere; to do other work; home duties; unsuccessful teaching; ill health, etc.

—The Seattle teachers' association at Seattle, Wash., regularly maintains a sick-benefit plan for its members, which has done much to remove the fear of illness and disability. During the past year, 26 teachers received the minimum benefit of $10, while 13 teachers received the full $60 benefit.

The board of education now grants full pay for five days' absence. An amendment to the constitution of the association, which became effective on November 10, provides that benefits shall be allowed at the rate of $2 per day for each day lost through illness or accident, but not more than thirty school days may be taken by any member in one year.

Believing it should function in more ways than one, the members of the association, for the past two years, have worked upon such problems as hospitalization, credit unions, and a home for retired and convalescent teachers. The credit union is a successful new organization, while the home for retired teachers holds promise of becoming a reality.

—The variety and the extremes of practice in regard to the matter of sick leaves for school teachers have been discussed recently in School Life, a magazine published by the U. S. Bureau of Education. The bureau finds that, in some schools, there is no provision whatever for a teacher's sick leave, other than the filling of her place with a substitute whom the absent teacher pays for out of her salary. On the other hand, some schools allow almost unlimited leave without deductions in salary. There are leaves granted at full pay, half pay, and one-third pay; there are allowances at full pay for a certain number of days, and half pay afterward; there is full pay for 2 days, 5 days, 10 days, 15 days, 20 days, 30 days, and 60 days.

Of the 163 cities of more than 30,000 population reporting to the bureau's inquiry, about one half allow at least 10 days' sick leave annually at full pay, and two thirds allow at least 5 days. Nine cities grant 20 days or more at full pay.

The study shows that the sickness of teachers is usually brief; the average number of days of sickness for all teachers is only about 3½ days. Many teachers have no sick leave, and very few have prolonged leaves.

In some places a method of cumulative allowance has been adopted with the purpose of providing for increased length of illness in later life, and of rewarding the teacher for the length of her service. A good example cited was that of Denver, Colorado, where the sick leave allowance begins at 5 days and is cumulative in the same amount annually up to 60 days in the twelfth year of service.

The length of illness was found to be extremely variable, so that no conceivable scale of days, cumulative or noncumulative, can be made to fill all cases. However, a cumulative plan can be devised which will fit almost all cases, and which has the advantage of giving the teacher an encouraging outlook for sickness allowance as time goes on.

TEACHERS AND ADMINISTRATION

—Sabbatical leave has recently been adopted by the school board of Terre Haute for teachers in the schools. Under the plan, teachers are granted one year for study after seven or more years of successful experience in public schools of the city. For each subsequent period of service of seven years or more, an additional leave may be granted for study or professional advancement.

During absence on sabbatical leave, the regular salary will be paid, less the amount paid to the substitute. The time of such absence will count as regular service toward retirement, and full contribution toward the retirement salary will continue during the period of the leave.

—Alton, Ill. Upon a recommendation of the instruction committee, the board of education has ruled that teaching contracts for the next school year shall include a clause that the board will enforce a rule that teachers give thirty days' notice if they desire to cancel a teaching contract. The board has had a rule for some time but for some reason it had not been regularly enforced.

—Clinton, Iowa. The school board has adopted a recommendation providing that only unmarried persons, or heads of families, may be appointed as substitute teachers. The action was taken for the reason that in employing unmarried women, graduates of the normal-training department, substitutes as good as those now employed could be obtained, and these would also receive training.

—Chicago, Ill. Two separate organizations of teachers in the schools are planned by Supt. W. J. Bogan and his staff. One has for its major purpose the supplying of information by the teachers to the superintendent to aid him in running the schools. The other is to be the medium through which the superintendent may convey information to the teachers as to how he wants the schools conducted.

The first organization will be known as a teachers' council, similar to one organized many years ago under Mrs. Ella Flagg Young. The second is a department organization in three geographical divisions, and comprising teachers assigned to four different groups under the subject headings of the branches taught by them. These teachers will hold regular meetings and will discuss educational problems suggested or approved by the superintendent's office.

(Concluded on Page 137)

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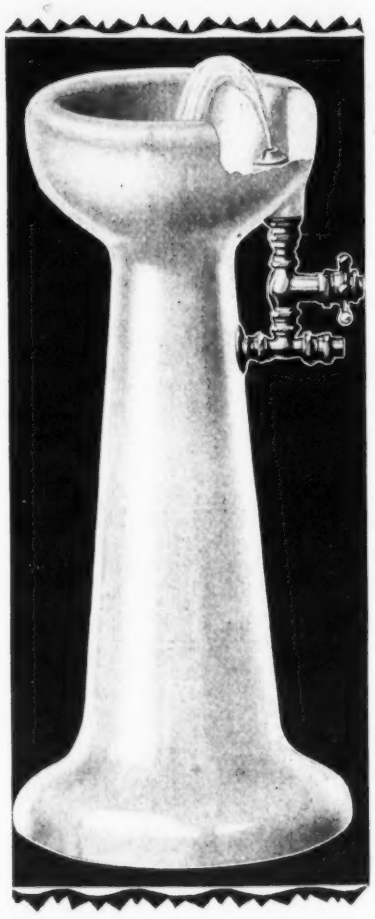
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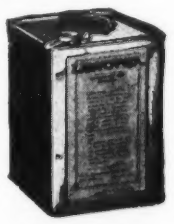
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L. SONNEBORN SONS, Inc.,
114 Fifth Avenue, New York

Without incurring any obligation, I would like to talk with your representative about school building renovation.

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TOILET PARTITIONS

THERE IS AN INSTALLATION IN YOUR LOCALITY

ESPECIALLY DESIGNED AND CONSTRUCTED TO GIVE THE HIGHEST VALUE OBTAINABLE FOR SCHOOL PURPOSES

Litterer Bros. Manufacturing Co.
3022-3032 North Rockwell Street
CHICAGO -:- -:- ILLINOIS
Representatives in all principal cities

(Concluded from Page 134)

—Port Huron, Mich. The school board has adopted a schedule of salaries for teachers in the night-school classes, ranging from $4 to $5.50 per night.

—Funds reserved by the board of education of New York City to complete in 1929 the revision of teachers' salaries should be used not for general salary increase, but for distribution under a plan which would raise the standards of teaching in the city schools, according to the two citizens' committees which have investigated the matter of teachers' salaries.

It was largely upon the recommendations of these two committees that the general salary revision was adopted by the board of education a year ago. Both the citizens' committees and the mayor's committee recommended supermaximum rates in the schedules which were distributed to teachers meeting the higher standards.

The board of education will hold a meeting in the near future to consider plans for distributing the funds which will be left over this year by reason of the nullification of the supermaximum rates and the additional money which will become available in 1929, which will be approximately $3,000,000.

—Denison, Tex. The school board recently discussed changes in the by-laws governing the compensation of teachers while absent from their duties for various reasons. A general ruling provides that teachers absent from duty shall have their salaries reduced by one twenty-eighth of a month's salary for each day of absence. In case of a death in the family, the teacher is given full pay for a reasonable amount of time out of school.

—The school committee of the town of Killingly, Conn., has passed a rule providing that, where a teacher is absent because of personal illness, there shall be no deduction in salary, provided the period of absence does not exceed ten days in any school year. For absence exceeding ten days, the salary will be deducted in full.

—Seymour, Conn. The board of education has adopted a policy providing that only trained teachers shall be employed for the teaching of foreign-born adult students in the evening schools. The action is due to a sentiment that the teaching of foreigners requires a different approach and technic from that used in teaching other students. Under the new plan, each teacher employed for this purpose has been required to complete a special course in the summer school conducted by the state education department at Yale University.

—The school board of St. Louis, Mo., has prohibited the admittance of students at the Harris Teachers' College for four-year terms until further notice, due to the fact that the College has graduated more qualified teachers than there are vacancies in positions.

—Lockport, N. Y. The board of education has raised the salary of the school medical inspector from $2,600 to $2,800, with yearly increments of $100 up to a maximum of $3,000. The change was made in view of the additional duties assigned by legislation and the increased government aid given the school.

—Olneyville, R. I. A study of the progress of the school children has been made by the superintendent of schools in an effort to adapt the work as far as possible and to increase the efficiency of the schools so that each individual pupil may have the best educational opportunity.

Ability tests were given to children to assist in determining the educational needs of each, and standard achievement tests were conducted to discover the best accomplishments in the several subjects of the curriculum. The study revealed that 10 per cent, or 201 boys and girls are accelerated, 74 per cent, or 1,444 children are making normal progress, and 320 pupils, or 16 per cent, are having considerable difficulty in their work and are retarded.

—President W. J. Whipple of Superior, Wis., has appointed a committee to undertake a revision of the rules governing the school-board operating policy. The rules are intended to conform with the elective system put into operation a year ago, when the appointive system of choosing school-board members was abandoned.

—Cranston, R. I. The school board has refused a request of the patrons of a girls' scout troop that the Brownie troop be permitted to use the school building free of charge. The board's action was based on the fact that little girls of 4 and 5 years belong at home at five o'clock at night and not in schools. The request for the free use of the building was made because the smaller children, members of the troop, were not able to pay their share of the overtime of a janitor and were always in debt.

—Helena, Mont. The school board has adopted a resolution providing that all members shall attend meetings, unless prevented by illness or absence from the city. The action was taken because of the absence of a member, whose name appeared on three committees, but who had absented himself from the meetings the greater portion of the year.

—The school board of Helena, Mont., has adopted a recommendation providing for a fee of $10 for the public use of school halls or auditoriums, where an admission fee or a silver offering is taken.

—The school board of Helena, Mont., has ordered the clerk to inventory all used and old books which have accumulated in the several schools. These books will be gathered and sold for old paper, or offered for sale to second-hand book dealers.

TEACHERS' SALARIES

THE DANIELSON SALARY SCHEDULE

The board of education of Danielson, Conn., has adopted a salary schedule for the teaching staff. Under the schedule, teachers and principles are classified in groups based on the amount of professional training.

Assistant teachers will receive a salary of $900 to $950 per annum, based on training and experience.

Women teachers, graduates of a two-year normal course, will be paid as follows: Group three—first year, $1,000, second year, $1,050, and third year, $1,100; group two—first year, $1,150, second year $1,200, and third year, $1,250; group one—first year, $1,300, second year, $1,350, and third year, $1,400.

Women teachers, graduates of a four-year college course, will receive salaries $200 in advance of the above schedule, regardless of the position held.

Men teachers, graduates of a four-year college course, will be paid as follows: Group three—first year, $1,500, second year, $1,575, and third year, $1,650; group two—first year, $1,725,

(Concluded on Page 140)

Don't Fail to See a Durabil

THE Improved Durabilt Locker which we announced in the September, October, and November, 1928, issues of the American School Board Journal, and so comprehensively described and illustrated in our recent locker folder No. 6000, has been received in a most gratifying way by Boards of Education, School Superintendents, Schoolhouse Architects, Purchasing Agents, etc.

The fact that Boards of Education in such cities as Chicago; Oakland, California; Lancaster, Pennsylvania; Fort Lee, New Jersey; Evanston, Illinois; Ecorse, Michigan; Holden, Missouri; Rockville, Maryland; West Allis, Wisconsin; Mart, Texas; Burbank, California; Aurora, Illinois, and many others have already placed their orders for Durabilt Steel Lockers, shows in a limited way, the national reception the Improved Durabilt is receiving.

Today, more than ever before, the Durabilt Locker is recognized as the outstanding leader by important buyers, not only in the educational field, but by others who are authorities on lockers.

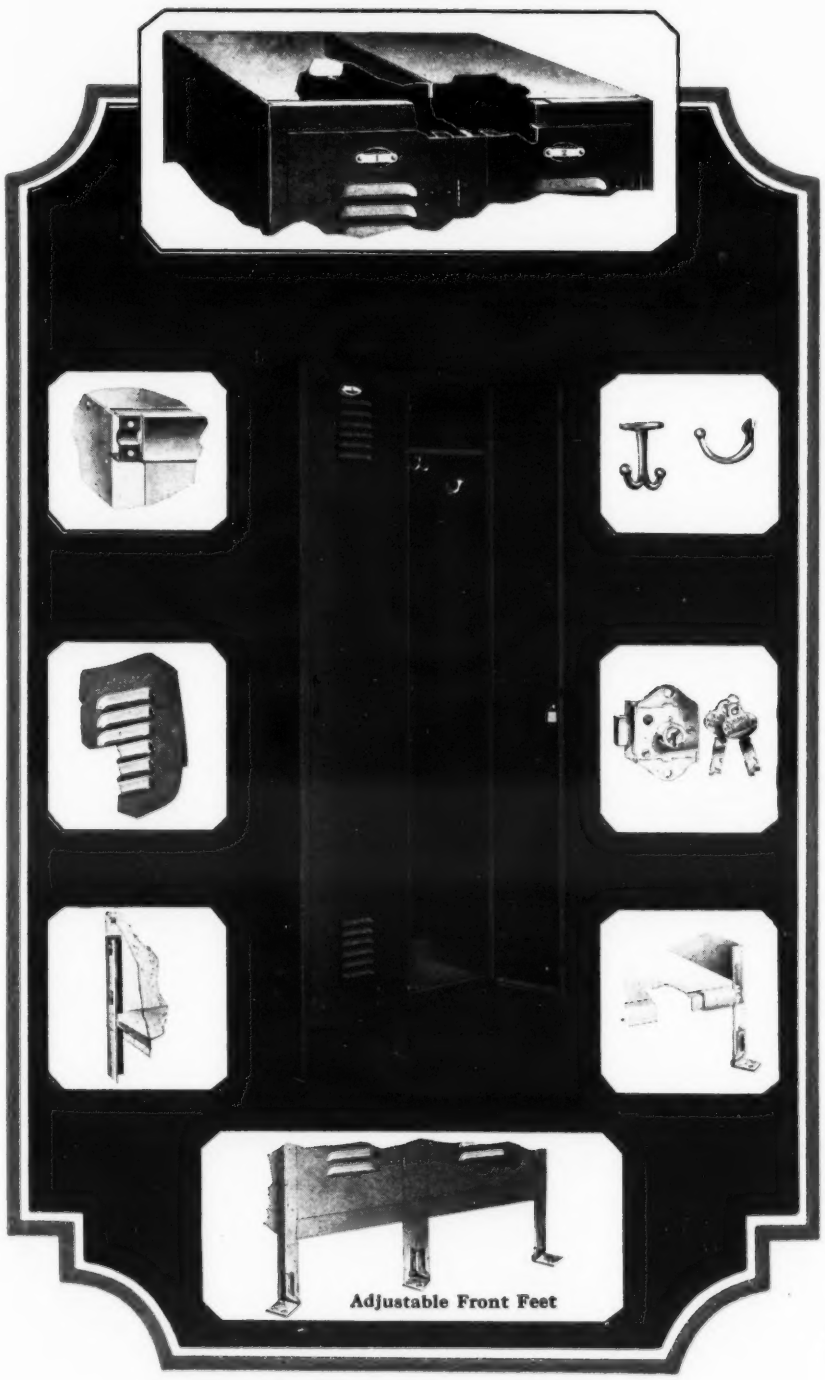
The high quality of our Improved Locker has a real appeal to School Executives, and we suggest that you see a sample of this wonderful new locker and secure our attractive prices, before you purchase. Compare the Improved Durabilt with others—study the details of construction—check over the specifications—and see for yourself that—

Durabilt, alone, Offers so many Features of Merit at such Moderate Cost.

We cannot adequately describe the Improved Durabilt Locker in this advertisement, so have prepared a very attractive and complete folder. No. 6000, to present its merits to all who are interested. We will gladly send a copy, without obligation to you, upon request.

If you are contemplating the purchase of locker equipment it would be a pleasure for a Durabilt Sales Engineer to assist in the preparation of plans and specifications that will insure a satisfactory installation for you. Phone our nearest Sales Office or write us direct at Aurora.

DURABILT STEEL LOCKER COMPANY
400 Arnold Avenue, Aurora, Ill.
Sales Offices in all Principal Cities



Let Construction — Not Price

bilt Sample Before You Buy

Outstanding Construction Features

1—**Rigid Door Frame.**—1" x 1" x ⅛" hard steel angle uprights. 1½" x ¾" No. 14 gauge formed steel channel cross members securely joined to uprights at each end by two $\frac{7}{16}$" countersunk head rivets, as riveting for this purpose is much stronger than welding. (Since *the strength of any locker is dependent on the rigidity of the door frame,* it will pay you to look into this point carefully when selecting your locker equipment.)

2—**Scientifically Reinforced Door.**—The illustrations of "Door Construction" and "Top Construction" show full-length tubular reinforcements on vertical edges of door, also hemmed flanges as used on both top and bottom of door. (No danger of bottom flange of door being bent out of shape by stepping on it.) Corners of door are securely tied together by means of arc welding.

3—**Quiet Automatic Latching Device.**—(No metal to metal contact when door is being closed.) This Patented, Tamperproof Latching Device is *Concealed* inside the vertical tubular reinforcement of door.

4—**Patented Stamped Steel** (not cast) **Straight-Lift Handle.**—With curled grip which provides ample space for comfortable hand-hold.

5—**Padlocking Attachment with Rubber Silencers.** — Arranged for use of any standard padlock; and in addition, is designed with two rubber silencers so that noise is practically eliminated when handle is raised or lowered.

6—**Reinforced, full looped** (metal formed completely around pin), **five-knuckle, Strap Hinge.**—Attached to door with two Binder Head bolts, permits door to open approximately 180 degrees. Three each on single tier and double tier standard lockers. The hinges are riveted to the door frame directly opposite the lock fingers as this gives added security. Hinge pins are embedded in angle so they cannot be driven out, neither would the removing of hinge bolts make it possible to enter the locked locker without a key.

7—**"Safety" Type Ventilating Louvres.** — (So designed as to prevent anyone injuring themselves on them.) Louvres are 4½" wide, with $\frac{7}{16}$" opening and are 1⅛" apart, center to center.

8—**Reinforcing Plate under Hinge.**—(This is a No. 14 gauge plate welded to inside of door which serves as an added protection against exceptionally rough treatment.)

9—**Improved Lock Fingers with Rubber Silencers** — which reduce noise from slamming of doors.

10—**Automatic Locking Bar Release.** — (Closing of door automatically releases locking bar permitting it to quietly drop into locked position.)

11—**Lock is attached to inside of door, without exposed bolt heads,** —which eliminates all opportunity of chiseling off bolts to gain access with malicious intent.

12—**All Coat Hooks attached with two screws**—making it impossible to twist off by hand or remove without use of tools. Udylite Rust-proof Finish.

13—**Perfect Fitting Top and End Finishing Strips**—attached by means of concealed screws. (By far the neatest and most attractive trim ever furnished for recessed locker installations.)

14—**Attractive Brass Number Plates.** — Each locker furnished with polished brass number plate with black filled depressed numbers $\frac{7}{16}$" high. Plates securely attached with split rivets (not screws) making stealing of them very difficult.

15—**Flush Bottom.**—(Easily cleaned and built strong enough so that standing on Bottom will not injure it.)

16—**Adjustable Rear Legs.**—(Very desirable for leveling up rear of lockers when floors are uneven.)

17—**Adjustable Front Feet.**—(Permit anchoring and taking up of irregularities due to floor unevenness.)

18—**All Screws and Nuts rust-proofed by the Parker Process.**—(This precaution eliminates possibility of getting rust spots on clothing.) All outside screws are of the slotless binder head type.

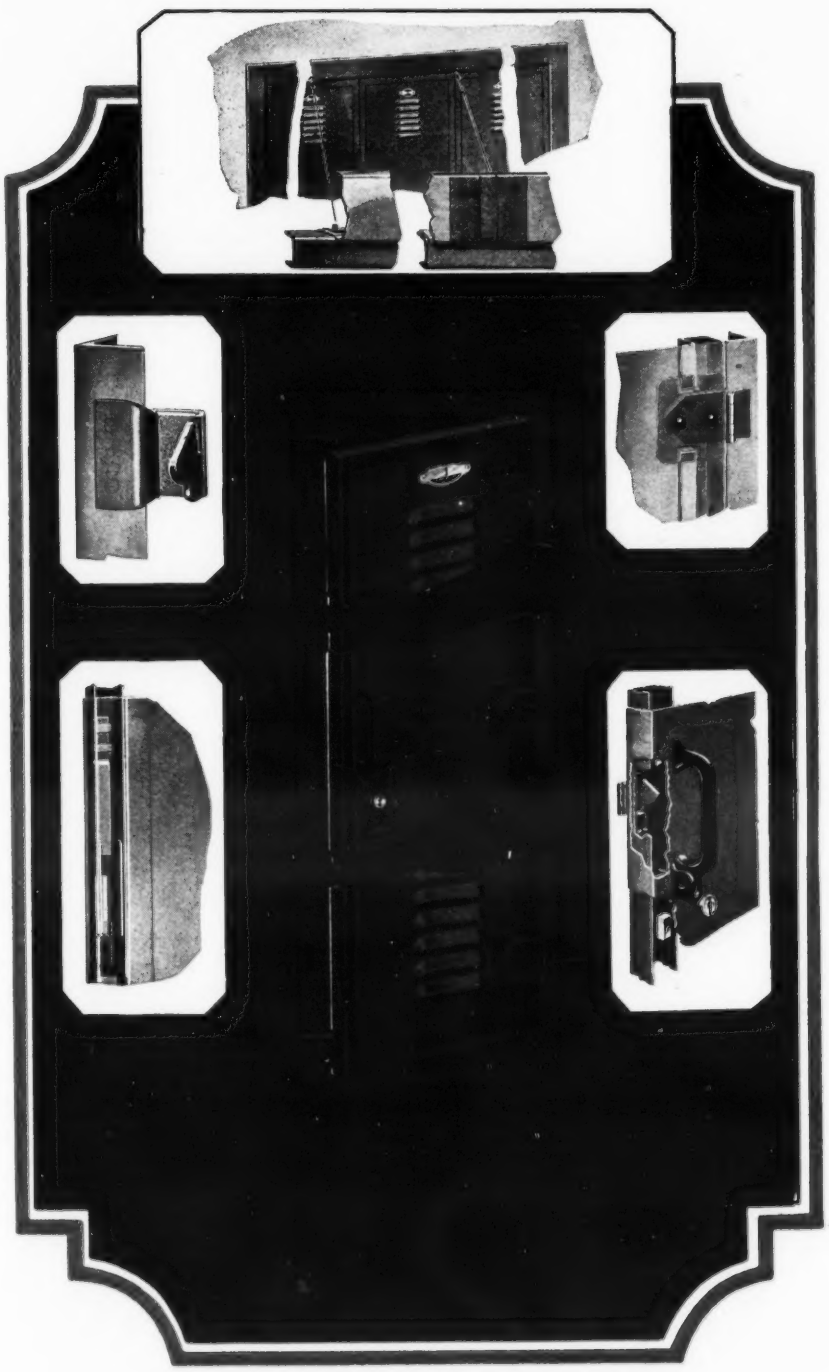
19—**Binder Head Hinge Bolts with Knurl under Head. Two to each Hinge.**—(Hold door securely and do not work loose in every-day use.)

20—**Curled Front Edge on Shelf.**—(No danger of injury by children hanging on them.)

21—**Right Hand Swinging Doors.**—Doors are hinged to swing to the Right (not left) as this is the logical way for right-handed people to open them.

22—**Attractive "Satin Texture" Enamel Finish.** — Baked on at proper temperature to insure finest appearance and durability. (Will stand rigid hammer test without flaking.) All parts thoroughly cleaned before enamel is applied.

23—**Special Equipment.**—In addition to standard equipment such special equipment as vertical partitions, coat rods, closed bases, drawers, umbrella racks, drip pans, mirrors, comb and brush trays, towel rods, golf ball trays, golf bag chains, chapeau hooks, sword clips, gun clips, etc., can be furnished to order.



"No better built than Dumbilt!"

rice Determine Your Choice

HALSEY TAYLOR
DRINKING FOUNTAINS



Do you buy SANITATION or just "fountains"?

There is danger in thinking of fountains as "just fountains." SANITATION should be the primary factor, especially in school installations. In Halsey Taylor Drinking Fountains you secure patented features which make health-safety an assured fact, guaranteeing the child against infection!

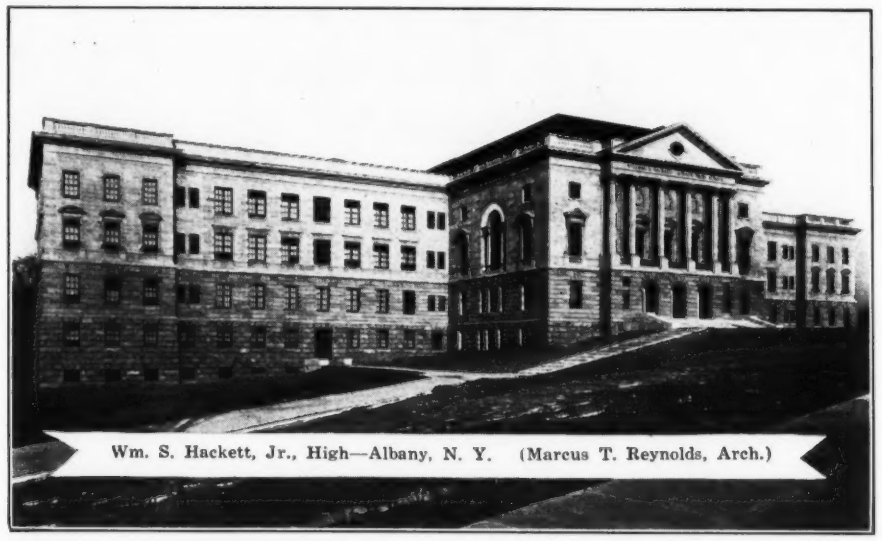
Write for our new school superintendents' manual.

The Distinctive Taylor Two-Stream Projector

A practical side-stream, the two-stream projector making it unnecessary for lips to touch at drinking point. **Automatic stream control** keeps stream at uniform height regardless of pressure variation.

The Halsey W. Taylor Co.

Largest Manufacturers of Drinking Fountains Exclusively
Warren, Ohio



Wm. S. Hackett, Jr., High—Albany, N. Y. (Marcus T. Reynolds, Arch.)

(Concluded from Page 137)

second year, $1,800, and third year, $1,850; group one—first year, $1,900, second year, $1,950, and third year, $2,000.

Men teachers, heads of departments, will receive a minimum salary of $1,800 and a maximum salary of $2,300. Women heads of departments will receive a minimum of $1,500 and a maximum of $2,000.

Supervisors will receive the same rank as heads of departments, provided they have had two years' experience previous to their appointment, otherwise the beginning salary will be $1,400.

Women teachers of backward children will rank $100 in advance of regular teachers.

Teaching principals will be paid according to the regular schedule, except that they will be paid $25 per year for each room under their direction, exclusive of the room over which they have direct charge. Men principals of graded schools, graduates of a two-year normal-school course, will begin at a minimum of $1,200, and will advance the same as regular teachers, up to a maximum salary of $1,600.

Under the rules governing the schedule, it is provided that advances beyond the group maximum, either in elementary, junior, or senior high schools, will be possible only upon evidence of improved teaching and additional professional study comprising thirty hours of work leading to an academic degree, which must be approved in writing by the superintendent and the school committee. In the elementary grades, it is provided that no teacher will be promoted from group three to group two, unless he or she holds a limited normal certificate, a limited intermediate certificate, or a limited special certificate. No teacher will be advanced from group two to group one, unless he or she holds a permanent normal certificate, a permanent intermediate certificate, or a permanent special certificate.

No teacher in the high school will be advanced from group three to group two, unless he or she holds a limited secondary, or a limited special certificate, and no teacher will be advanced from group two to group one, unless he or she holds a permanent secondary, or permanent special certificate.

Beginning teachers in the elementary grades must hold a normal, limited, or permanent certificate.

Heads of departments must show evidence of improved educational practice and the completion of approved professional courses comprising sixty hours of work for an academic degree, which must receive the approval of the superintendent of schools and the school committee.

TEACHERS' SALARIES

—Supt. E. C. Broome of Philadelphia, in a recent report to his board of education, recommends the appointment of a commission to make a study of the salary question. It is believed that Philadelphia has fallen considerably below the relative position on teachers' salaries that it held eight years ago.

—Rock Island, Ill. The board of education has taken up with the superintendent of schools and the business manager, plans for a revised salary schedule to be completed during the school year. It is the purpose of the board to have the schedule in operation before completing its contracts with the teachers in the spring of 1929.

—Norristown, Pa. The school board has undertaken a revision of the teachers' salary schedule in order to adequately compensate teachers who have reached the maximum salary. The new schedule will become effective during the 1929-30 school term.

—West Warwick, R. I. The school board has voted to pay teachers semimonthly instead of monthly as was formerly the custom. The pay will be divided into twenty installments so that each teacher will receive her entire salary in ten months. Janitors will be paid every two weeks during the twelve months of the year.

—Willimantic, Conn. The school board has revised the salary schedule for teachers. Under the schedule, the maximum salary for grade teachers has been increased to $1,600; the maximum for women high-school teachers to $2,000; and for high-school men teachers to $2,500. The increases in salary will increase the amount of the budget by $3,100.

—Springfield, Ill. The school board has installed 22 time clocks in the schools, for checking the arrival and departure of teachers and other employees.

—Supt. S. H. Holmes of New Britain, Conn., has been given authority to try out the experiment of teacher coaches for young teachers lacking a year of experience. Under the new plan, six college graduates will be assigned as substitute teachers, two in the senior high school, two in the Central High School, and two in the Nathan Hale Junior High School. These teachers will be paid a minimum salary of $1,000 a year. If they prove competent after the first year, they will be recommended for regular positions.

The teachers will also be used to "coach" pupils when they are not required as substitutes. The number of teachers has been limited to six.

—Decatur, Ill. The school board has voted to pay the teachers on a twelve months' basis in place of the former nine months' plan. In a vote taken by the teachers, it was found that 90 per cent were in favor of the change.

—Fitchburg, Mass. By a vote of four to three, the school board has restored the automatic salary increases, discontinued by a vote of the board on April 2. A total of 55 teachers are affected by the restoration of the salary schedule.

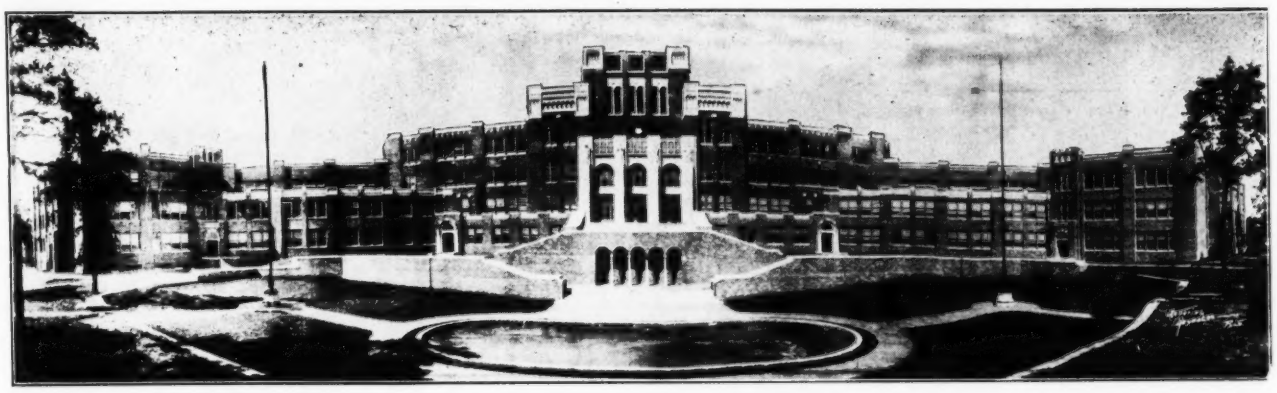
—Rockford, Ill. The school board has adopted a cumulative plan of sick leave for teachers and other employees under contract for the year. The new plan provides that supervisors, principals, teachers, janitors, and clerks under yearly contract shall be paid during absence from duty not exceeding five days at full pay, and five days at half pay, with certain restrictions. The sick leave and absence from duty will be cumulative over a period of five years.

The rules governing the leave of absence and pay are as follows: Serious illness or death in the immediate family, provided that pay for one day shall be allowed for the funeral of a relative not of the immediate family.

Pay for one day for a wedding in the family or of a relative.

If a teacher shall be absent the day after a holiday, she shall receive no pay for the holiday unless she were ill, and then the holiday shall be considered a part of sick leave.

Should a teacher not use any of the time allowed during a year, it will apply to the time she is allowed to take off the following year, and up to five years. Thus, if a teacher has not been sick or taken any absence during four years, and she should be out in the fifth year for illness, she could receive full pay for as high as 25 days, and half pay for 25 days.

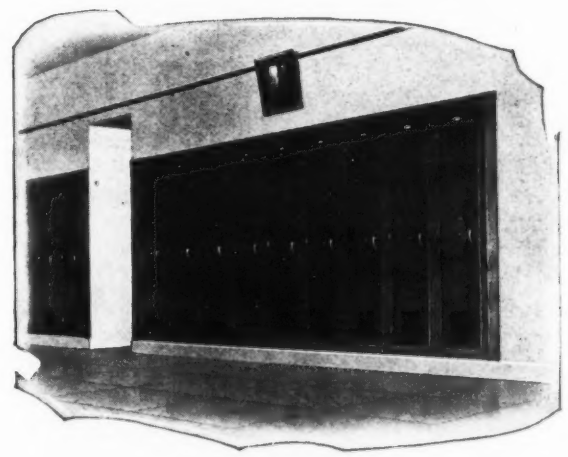


LITTLE ROCK ARKANSAS HIGH SCHOOL

One of the Most Beautiful Schools in America

THE newly completed Little Rock, Arkansas, High School is not alone a beautiful building; but is equipped and furnished throughout with the finest. It is significant that the gymnasium equipment and the steel locker equipment were designed and supplied by Medart. Fifty-five years' experience means much; not alone in manufacturing; but in the ability to make a real contribution to the physical side of education. For gymnasium and locker equipment, Medart products and Medart service offer an unmatched combination.

Gymnasium Apparatus Catalog or Steel Locker Catalog sent on request.

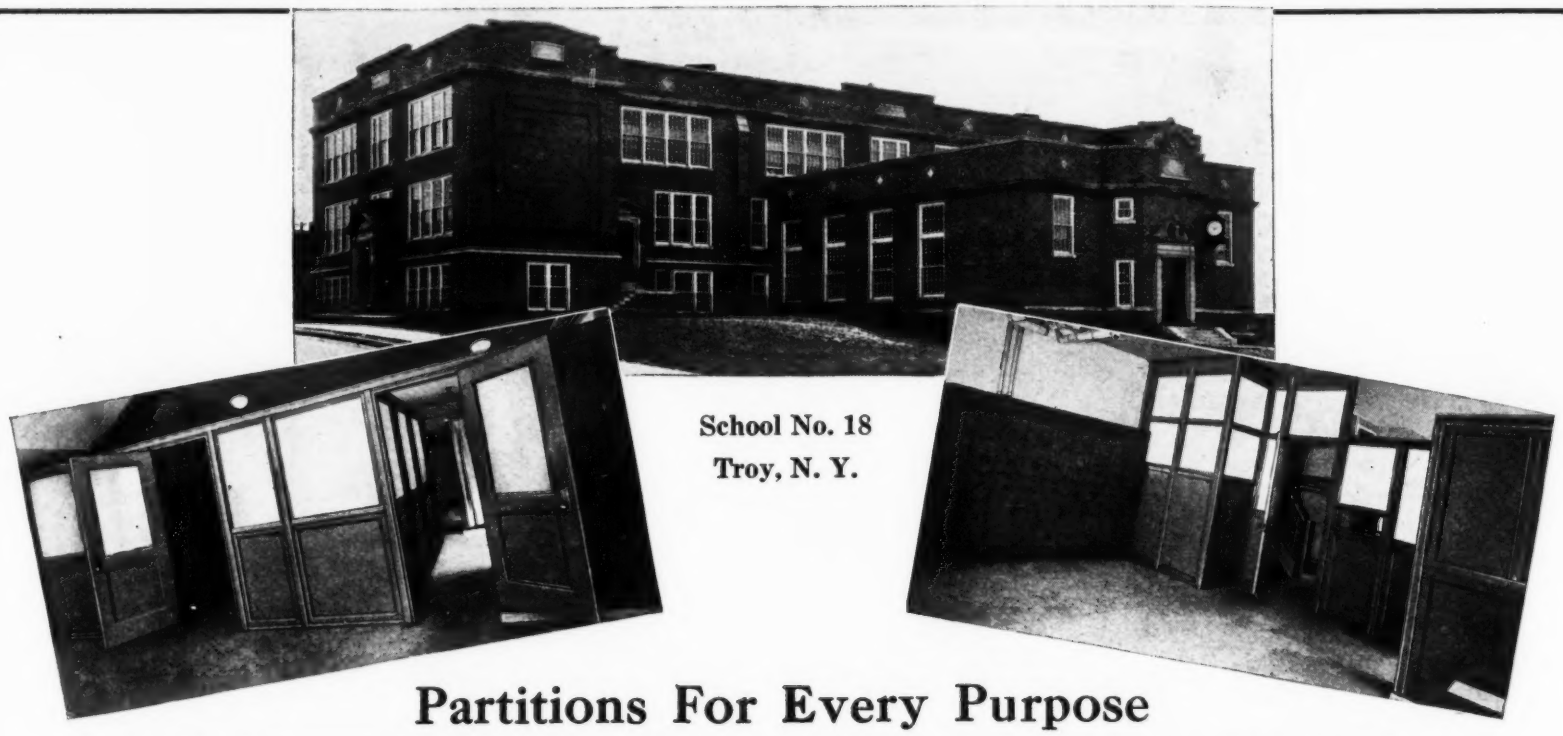


The Little Rock High School locker equipment consists of more than thirty-five hundred Medart Steel Lockers of the recessed type as shown in the above illustration.

MEDART

Fred Medart Mfg. Co. — **3530 DeKalb St., St. Louis**

Since 1873—Makers of GYMNASIUM APPARATUS, PLAYGROUND EQUIPMENT, STEEL LOCKERS, STEEL SHELVING, STEEL CABINETS, and the JUNIOR LINE for the HOME PLAYGROUND



School No. 18
Troy, N. Y.

Partitions For Every Purpose

FOR office, manual training rooms, corridor, study hall, gym; in fact for any part of a school structure there's a Sanymetal Partition as adaptable to requirements as are Sanymetal Toilet and Shower partitions to their particular purpose. Schools everywhere are finding them practical, sanitary, good-looking, indestructible, economical.

THE SANYMETAL PRODUCTS CO., 1705 URBANA RD. CLEVELAND, O.

Sanymetal T.M. REG PARTITIONS

WASHINGTON CORRESPONDENCE

A. C. Monahan, Formerly U. S. Bureau of Education

Meeting of Chief State School Officers

The National Council of State Superintendents and Commissioners of Education met during the month of December at the U. S. Bureau of Education in Washington. The meeting covered a period of three days and was attended by representatives of 34 state departments of education. Superintendent A. T. Allen of North Carolina, president of the council, presided.

The subjects discussed had to do with such topics as methods and means for securing uniformity in educational statistics through state departments of education; the United States Bureau of Education as a clearing house for educational information; a nation-wide study of educational finance; state school reports; educational statistics; and educational publicity.

Mr. L. A. Kalbach, Acting Commissioner of Education, represented the bureau and served as host to the visitors. He discussed the bureau's desire to cooperate with the Council in plans discussed by them. Honorable Roy O. West, secretary of the interior, extended his greetings to the group of superintendents at the opening of the meeting and pledged the support of the department of the interior through the bureau of education to the states and their chief school officials in every way possible.

The council appointed a committee of five statisticians from five state departments of education to assist the chief statistician of the bureau of education in determining forms for educational statistics and reports. This is in line with the trend of opinion at the meeting for making educational statistics throughout the 48 states as uniform as possible.

The council voted to hold a meeting each year similar to this one. Every second year it is to be held at the bureau of education in Washington, and in other years at the various state capitols. Meetings at the same time and place as the Department of Superintendents will probably be continued as in the past. These, however, are general meetings and are attended by members of the staffs of the state departments of education, as well as by the chief officers themselves.

1929 Appropriation for the U. S. Bureau of Education

The U. S. Bureau of Education for its regular work in Washington, D. C., will have during the year beginning July 1, 1928, $288,960. For the Alaska schools under its charge, it will have $580,400, with $171,780 additional for its medical work in Alaska, and $19,800 for its work with reindeer.

In addition to the amount given for its Washington office are two appropriations. One is for $8,000 to continue the survey of the Land-Grant Colleges for which a total of $117,000 was authorized. The other is $50,000 for a study of the organization, administration, financing and work of secondary schools and of their articulation with elementary schools and colleges. The study proposed will cost $225,000, the amount being available for the coming year.

Education as a Business in the United States

A total of 28,296,484 pupils are enrolled in schools and colleges of the United States according to the U. S. Bureau of Education. These are in all grades, and in public, private, and parochial schools. Approximately 90 per cent of those in elementary and secondary grades are in public schools. Less than 38 per cent of the college students are in state and city colleges and universities.

Approximately 977,300 teachers are employed in these schools of all types. The total annual cost of maintaining them is $2,745,000,000, and they have buildings, grounds, and other properties valued at $7,000,000,000; also endowment funds of over $1,000,000,000.

The cost per year per pupil in average daily attendance in public elementary and high schools is $102.05. No estimate is available of the cost of those in private and parochial schools.

Save-Our-Schools Committee

A national association to "save our schools" from propaganda of many sorts has been organized recently at a meeting of interested persons held in Washington, D. C.

This committee is the result of the startling revelations made in the investigation of the so-called power trust by the U. S. Federal Trade Commission, which showed that the public schools of the country and the colleges as well, have been used by various public utilities in distributing propaganda in their favor.

School Financing in the District of Columbia

Voteless Washington has no direct voice in appropriating money for the education of its children and must, therefore, find indirect ways of letting the bodies which determine the appropriation know its wishes.

Four groups have a say in determining the amount of money to be provided each year. The board of education prepares a budget to cover the needs for the year. This goes to the board of commissioners of the District of Columbia which has assumed the power of amending it, when it is then added to the budget prepared by the commissioners for the needs of the district departments. This goes to the U. S. Bureau of the Budget for consideration and forwarding to Congress for action. It passes the Bureau of the Budget, sometimes as presented, usually trimmed, but never increased. Congress has been known to add money over that recommended by this Bureau, but it has more often appropriated less.

It is a cumbersome procedure and one from which the board of education and the citizens through their various "citizens' associations" demand relief. Relief for hardships in voteless Washington is slow in coming.

The annual meeting of the board of education with the citizens' association was recently held. To it the board invited representatives of "parent-teacher associations, local civic groups, individual citizens, and taxpayers and friends of public education." The chairman of the board, Charles F. Carusi, presented the difficulty facing the board in the following words:

"It will take about $15,000,000, in round numbers, to provide your public-school system with adequate buildings and equipment. The system is educationally in the forefront of American cities. In the matter of equipment it lags behind. Some explanation is in order. It is indeed a strange thing that the national capital of the United States does not provide each one of its children a desk in a well-lighted, well-ventilated and well-heated schoolroom, in a building provided with suitable gymnasiums and assembly halls, and so located as to have adjacent ample playgrounds.

LYON *Offers*
The NEWEST *Development*
in School Locker Construction



A new and improved Durand Type Locker has just been developed by Lyon Metal Products, Incorporated.

This new Durand Type Locker was built on an entirely new principle. Because of its advanced design a handle is no longer required—the insertion of the key, a quarter turn, and a slight pull, is all the effort needed to open the door. A slight push—the locking mechanism engages and the spring bolt snaps into locked position.

The locking mechanism operates with a minimum of sound—all that is heard is the click of the lock as it engages the door jamb.

Just glance down this list of features.

(1) Because of the absence of a handle and similar exterior accessories, it makes an exceptionally neat appearance when installed—particularly on recessed corridor jobs.

(2) The key is not required to lock the door as the locking mechanism is automatic in its operation. If a student leaves his door open a slight push by some friend or janitor will close and lock it.

(3) Because of the entirely new principles in constructing both the locker and the locking mechanism, it is essentially an unusually quiet operating locker.

(4) Durand Type hinges are used, which are inconspicuous yet sturdy enough to stand the hardest use and abuse.

(5) A rigid steel angle frame with welded joints assures perfect alignment between doors and frame for years to come.

Write for literature, just off the press, describing this improved locker. Lyon men with nation-wide experiences in locker installations will gladly consult with you on your locker needs. So write us for more information on the NEW Lyon Durand-Type Steel Locker.

LYON METAL PRODUCTS, INCORPORATED
Aurora, Illinois

Successor to

DURAND STEEL LOCKER CO. *Chicago Heights, Ill.*

LYON METALLIC MFG. CO. *Aurora, Ill.*

Steel Shelving . . . Lockers . . . Cabinets . . . Counters . . . Steelart Folding Tables and Chairs . . . General Steel Storage Equipment and Steel Furniture. The Lyon name and trade mark attest the strength, finish, usefulness and durability of Lyon Steel Products

LYON
DURAND-TYPE
STEEL LOCKERS

Detroit Atlas
Portable Bleacher Seats

THE COMBINATION OF ALL THE FOLLOWING VITAL POINTS IS EXCLUSIVE WITH **DETROIT ATLAS.**

Lowest Average Yearly Cost—No Upkeep

STRONG—SAFE—GOOD LOOKING

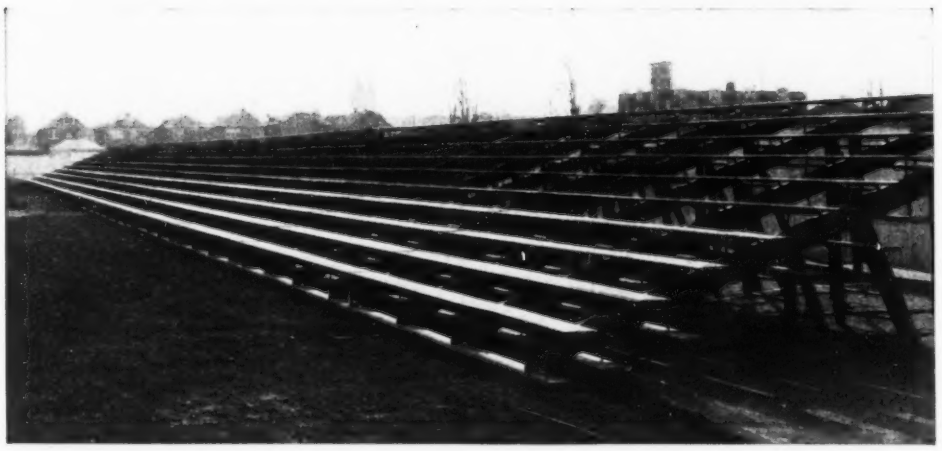
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DEDICATE RADIO BROADCASTING STATION IN FORT BEND COUNTY, TEXAS

Two thousand six hundred school children representing the white schools of Fort Bend county, together with Supt. E. E. Oberholtzer of Houston, and Supt. R. E. Scott of Richmond, were present at the invitation of Supt. J. F. Ward of the Fort Bend county, Texas, schools, to take part in the dedication of the radio broadcasting station at Richmond on Monday, November 19. Supt. J. F. Ward of Fort Bend county was in charge of the program and gave a brief talk to the school children, which was followed by an address given by Supt. E. E. Oberholtzer. State Supt. S. M. N. Marrs, who was also a guest, expressed his appreciation of the opportunity to participate in the program and stressed the importance of loyalty as an element of good citizenship.

The radio broadcasting system is the first innovation of the kind in the country and comprises radio receiving sets owned and controlled by the 35 rural schools of Fort Bend county. A contract with a local radio supply company made it possible to obtain the radio sets at a discount of 40 per cent. The entire cost of the station, including all of the sets in the 35 schools, amounted to $3,500, or $100 per school. The broadcasting system is owned and controlled by the county board of trustees and is conducted under the direction of the superintendent, Mr. J. F. Ward, for the rural schools of Fort Bend county.

The programs will be arranged by the county superintendent in such a manner as to keep in close touch with the schools and will be used to promote the community-center idea in each part of the county, to obtain the benefit of the nation-wide programs, and to promote educational purposes.

EXTEND FACILITIES OF THE ROSENWALD FUND

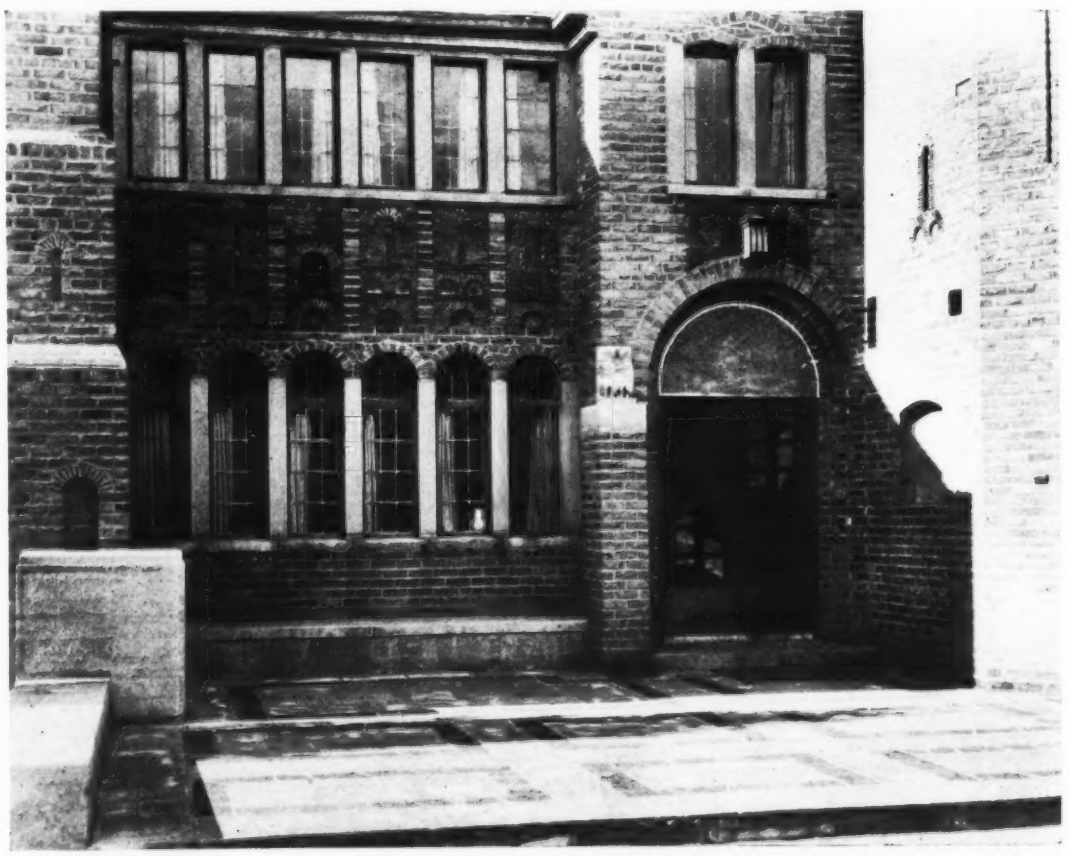
Mr. Edwin R. Embree, president of the Julius Rosenwald Fund, has announced an extension of the activities of the Fund, previously concerned with the building of Negro schools, to include the support of medical service to people of moderate means.

Dr. Michael M. Davis, who has been appointed to the executive staff of the fund as director for medical service, is known as an authority on hospitals and clinics, and as a writer on public health subjects. Dr. Davis will direct the program which the Fund is planning to undertake, in cooperation with the medical profession to improve the facilities for medical service to the average man.

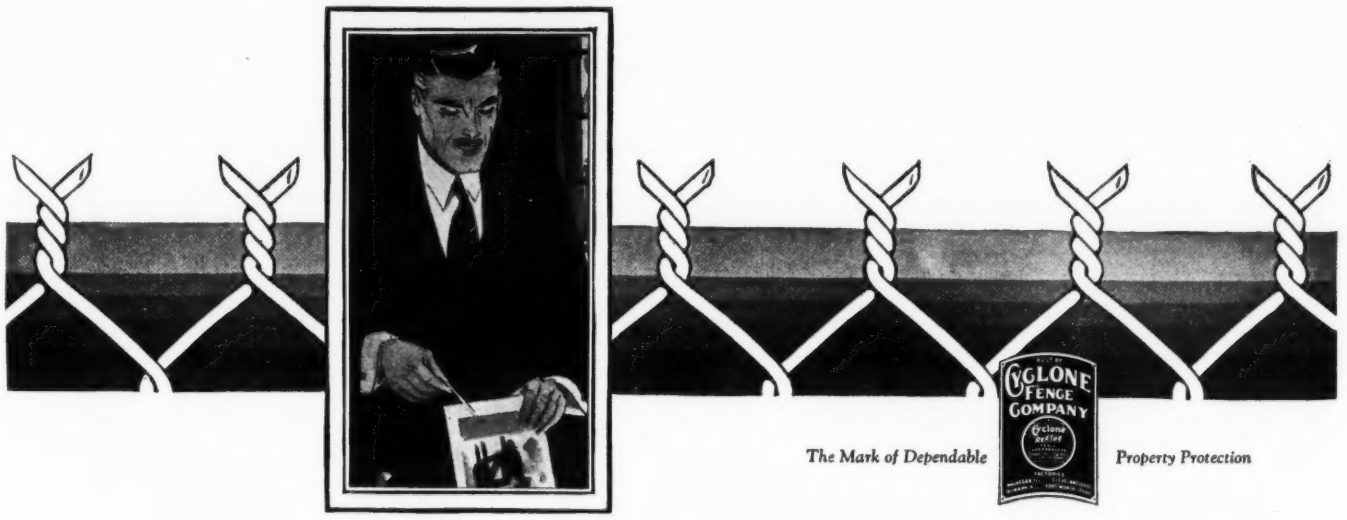
ASSOCIATION ELECTIONS

—Miss Huldah L. Winsted of Minot was elected president of the North Dakota Education Association. She is connected with the Minot Teachers' College.

—Howard H. Gilpin, superintendent of schools of Rogers City, Mich., was elected president of the sixth district of the Michigan Education Association. Charles Brown of Mackinaw City was chosen vice-chairman.



CRANBROOK SCHOOL, BLOOMFIELD HILLS, MICH.
Eliel Saarinen, Architect, Cranbrook Architectural Office, Bloomfield Hills, Mich.
(Third Mention, Class B—Common Brick School Competition, 1928.)



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HOW much should a good fence cost for your property? Which fence will prove the most economical on the only sound basis of per-year cost?

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Call a Cyclone Fence representative! Lay your fencing problems before him. Consult him on fence engineering practice, methods of installation, latest fence improvements, manufacturing operations, quality of materials used, types of fence for your purpose, etc. Cyclone representatives are fence specialists — trained to know fence by working in Cyclone plants, studying fence application in the field, and actually erecting fence. In addition to this training is well-rounded experience which has developed resourcefulness and mature judgment on every type of fencing problem.

Consultation with a Cyclone representative saves time of busy executives who wish to investigate fencing. It enables them to get a panoramic picture of fence — complete information from a single source. This is part of Cyclone Service—rendered by the most complete fence-service organization in the world.

Call a Cyclone representative. Then you will be in a position to make comparisons of true fence values and decide for yourself which fence is the most economical to buy. Write, phone or wire nearest offices and have a Cyclone representative call, without obligation.

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CYCLONE FENCE COMPANY **Main Offices: Waukegan, Ill.**
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Direct Factory Branches in All Principal Cities
Pacific Coast Division: Standard Fence Company, Oakland, Los Angeles and San Francisco, Calif., Portland, Oregon, and Seattle, Washington.

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Children respond to the example of CLEAN Floors

IT is surprising how quickly children respond to any example of cleanliness. Take floors, for instance. If floors are kept scrupulously clean, in the first place, it is easy to appeal to children's innate desire of "wanting to help" by urging that they endeavor to keep them that way—no more littering with paper—a careful wiping off of shoes before entering the building. There are any number of ways by which an understanding teacher can enlist their aid. Such habits of cleanliness lay a firm foundation for their whole outlook on life. It is your responsibility, Mr. Superintendent or Board Member, to see that the floors in your schools are kept spotlessly clean, not only for the sake of the children who are in your care, but for **appearances** as well.

With the installation of FINNELL SYSTEM your school floors can be kept in better condition than ever at a cost which is cut to a minimum. The FINNELL is an all-purpose machine — it waxes, polishes, scrubs, removes varnish, and sands. Can be used on any kind of floor — whether to scrub grime and grease from oiled floors, to sand and refinish varnished floors, to apply wax on linoleum, or scour tile and terrazzo. In every floor renovation or maintenance operation, the FINNELL SYSTEM will save time, money, and labor.

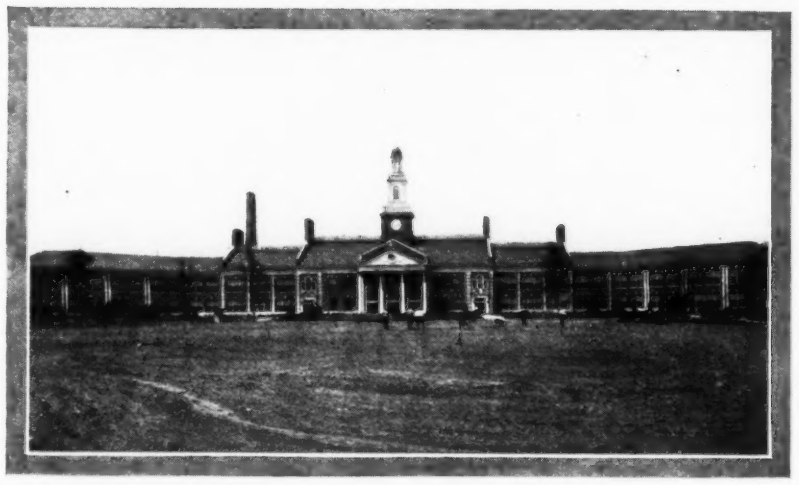
For every school there is an efficient and economical FINNELL SYSTEM—eight sizes of scrubber-polishers permit adaptation to any needs. FINNELL floor maintenance engineers will gladly examine your floors, tell you the best way to care for them, and show you the cheapest and most efficient method. To get this information does not cost you more than a postage stamp. Write us today. Address FINNELL SYSTEM, INC., 2513 East St., Elkhart, Ind. Also Standard Bank Bldg., Ottawa, Ontario, Canada. Factories: Elkhart, Ind., Hannibal, Mo., and Ottawa, Ont., Canada. District offices in principal cities.



Prices
$87.50 to $875

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ELECTRIC FLOOR MACHINE
It scrubs It waxes It polishes

These washable window shades give you lasting beauty.. longer life



Grosse Point High School, Detroit, Michigan, Tontine-Equipped — architect, George J. Hoas

WINDOW shades are one item that need not put a heavy burden on the operating budget of any school building.

For here are window shades that live twice as long as ordinary shades — that may be instantly restored to all their original beauty by an occasional washing. These are Tontine window shades, developed by du Pont. They make it possible for you to save on window shade replacement costs for many a season.

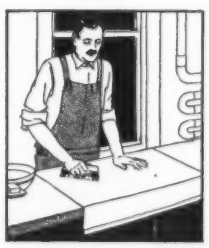
Tontine window shades are made to defy wear and tear — to withstand both use and abuse. Impregnated with pyroxylin, the same basic material which makes du Pont Duco so enduring, they cannot crack, pinhole or fray. With them you may be sure of sturdy, attractive shades that will remain fresh and clean with just a little care.

Next time you buy window shades — give Tontine a chance to show you how you can save money by purchasing longer service. And to obtain maximum shade service have your dealer mount your Tontine window shades on the companion product — Tontine Rollers.

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DU PONT **TONTINE**
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THE *WASHABLE* WINDOW SHADE



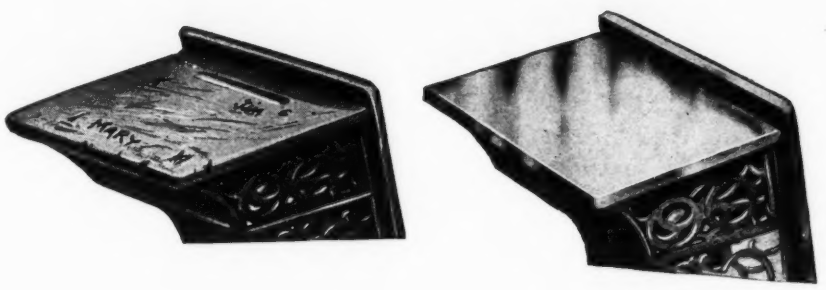
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Up-to-date manual training departments find this 22-pound Sanding Machine one of the most popular and valuable of tools in teaching skill and carefulness, and your maintenance department needs it, too.

Pays for Itself many times over

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School Hygiene and Sanitation

THE NORMAL WEIGHT OF CHILDREN

It isn't the height, it's the thickness and width of the body that is more important than the length in determining what a boy or girl should weigh, according to Dr. Raymond Franzen, research director of the American Child Health Association's school health study, who spoke in Chicago on October 19, before a joint session of the American Child Health Association and the American Public Health Association.

It has been customary, Dr. Franzen pointed out, for a good many years for boys and girls to step on the scales, watch the pointer go around to a stop, and then knowing how tall they are, look at figures to see whether they are above or below weight. Most children survived the ordeal with smiling faces, but one or two out of every five would find themselves way below the tables and fit candidates for the undernourished class.

Dr. Franzen views the body as a cylinder which has diameter as well as height. Two cylinders of the same material and the same height may have very different weights depending on their diameter. Similarly, body frame works vary not only in height, but in width and thickness. The wide framework can carry, and is meant to carry, more weight of flesh and fat and organs than a narrow framework even though the height is the same. For this reason, Dr. Franzen points out that the width and depth must be known, as well as the height before you can say a person's weight is deficient. Dr. Franzen has devised methods for taking into account the various bony measurements in predicting weight.

Dr. Franzen's findings are based on measurements of 8,000 children in the fifth and sixth grades, of schools in seventy cities scattered over the country. Points as far removed as New Orleans, Spokane, St. Paul, and Providence were studied by physicians and educators.

The calculations have been carried to the point that the relative importance of each body dimension in determining weight has been computed. For instance, among 11-year-old boys, the width of the hips is 30 per cent of the total influence determining weight. The depth of the chest exercises 25 per cent influence, breadth of chest 20 per cent, height 20 per cent, and width of shoulders 5 per cent. The proportions for girls are somewhat different, the chest dimensions being of still greater importance and height less.

Dr. Franzen cautions educators not to confuse weight with nutrition. Underweight or departure of weight from that of his "anthropometric peer," is a measure of the degree to which a boy differs from the usual run of boys. The significance of this departure in terms of health, however, is quite another matter.

Nutrition is an ambiguous term. It would be better to use exact body measurements and the thickness of the padding immediately under the skin than to use general measures of nutrition. One interesting fact reported was that a child could be heavy without being fat and that a child could be fat without being heavy. In other words, the padding under the skin does not go hand in hand with total body weight. It is the size of the skeleton that is most important in determining weight. Dr. Franzen believes that further study of the thickness of the padding under the skin might be very valuable in helping to interpret how well children are assimilating their food.

THE FARGO PRESCHOOL HEALTH PROGRAM

As a result of a complete program of preschool health work organized in Fargo, N. Dak., in 1923, 63 per cent of the children who entered school last year had been reached by the health department, according to Dr. B. K. Kilbourne, city health officer, who spoke recently before the American Public Health Association.

Dr. Kilbourne showed that many of those children first seen in 1923 were infants at that time and were reached through the routine service to that group and have been carried continuously since.

The goals of the Fargo preschool health service may be summed up as follows: Every preschool child should have a physical examination regularly every six months, or as often as his doctor advises. The aim is to emphasize the family physician as he should increasingly assume this responsibility. The child should be immunized against diphtheria and vaccinated against smallpox if this was not done in infancy. He, with his family, should be instructed in the essential health habits, so that he sleeps and rests regularly, eats heartily, and welcomes the wholesome outdoor play and companionship of other children. He should have early and prompt attention during illness. His environment should be controlled to prevent harmful influence affecting his development. He should have regular dental examination.

In all the work, the private physician and the private dentist accomplish these goals informally, and the health department and school board formally cooperate. The plan in operation, supplements private practice and makes available every essential health service to preschool children, and an educational program is designed to stimulate parents to avail themselves of these opportunities. It is the belief of the Fargo authorities that with the proper use of the facilities available in most small cities, much can be done to approximate this goal.

HEALTH OF PRE-SCHOOL CHILD

That work for pre-school children should begin with or before the birth of the child and be continued until all parents are sufficiently intelligent to recognize deviations from a desirable standard of health and are in a position to get the help they need for their children as soon as that need is present was the contention of Miss Mabelle S. Welsh, Associate Director of the East Harlem Nursing and Health Service, New York City, who spoke on October 16 at a joint session of the American Child Health Association and the American Public Health Association in Chicago.

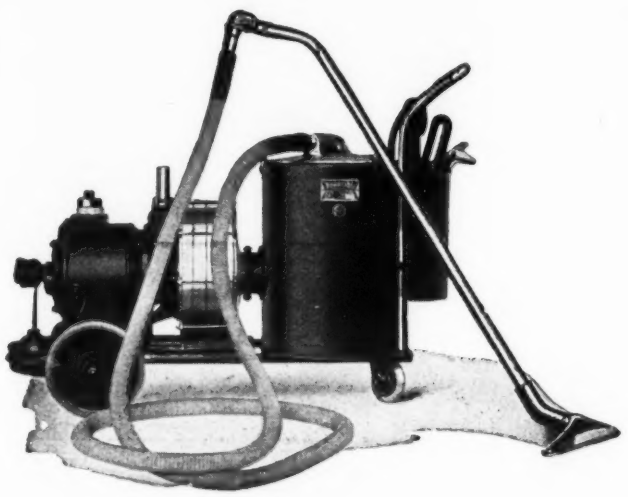
Miss Welsh described the five-year program of the East Harlem Nursing and Health Service which has touched 4,464 children between the ages of two and six years, and 3,225 infants.

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DOVER, OHIO, U. S. A.

"No other organized service existed in the district although certain children were reached in connection with health and social services rendered by family welfare agencies and the municipal health department," Miss Welsh said. "The people of the district are mainly of Italian origin or descent and the majority are in the lower income group of unskilled laborers. Very little health supervision is given by the private physicians of the neighborhood since the people themselves are slow to call in medical aid except for acute illness. The pre-school demonstration service recognized that the starting point in the health care of the child must be the education of the parents in the home. The home service was not rendered as a follow-up service from a medical clinic but as a fundamental educational service which used the medical conference service as a tool in the health care of the individual child.

"The most common physical defects noted by the medical examiners were poor posture, decayed teeth, malnutrition, and diseased tonsils. In these four groups fall 94 per cent of all defects noted, exclusive of those that are temporary in character and others that are uncorrectible.

"Pneumonia presented the most outstanding sickness problem, with the highest percentage of all cases, 24.6 per cent, and the highest percentage of all deaths among nursed cases, 52 per cent. Measles ranked second in frequency with 20 per cent of all cases. Communicable disease looms up as a problem in the second half of the first year of life when deaths from this cause were doubled."

Pending action and follow-up by the school doctor and nurse, all teachers were asked to begin follow-up work, to the end that children with vision and hearing defects might be seated toward the front of the classroom; and that those with dental defects be referred directly to the home.

HYGIENE AND SANITATION

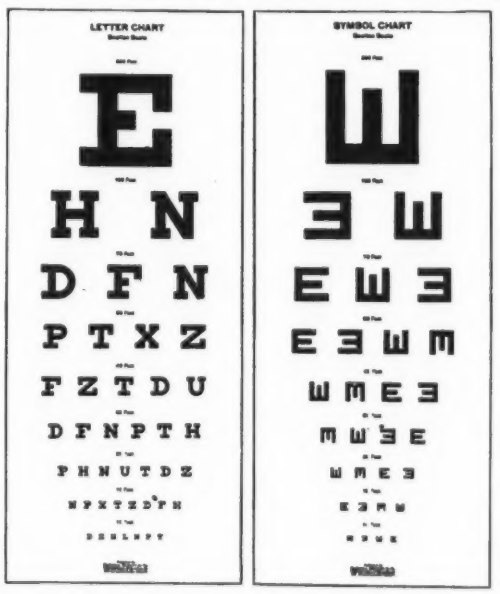
—Chicago, Ill. The organization of the public-school system into forty separate health districts, with a central headquarters in each, has been planned by Supt. W. J. Bogan.

The initial step will be taken in the near future, when a health curriculum will be submitted for approval and a location selected for the proposed headquarters.

The action was taken following a meeting attended by the local health commissioner, the director of the Chicago social agencies, and several school physicians. Dr. Kegel reported that a survey of health conditions revealed that 437,000 school children suffered from physical defects which are remediable.

A headquarters staff of thirty, including representatives of the health department, school vocational-training department, and civic organizations working among pupils, will be established. The expense will be divided among the participating agencies.

—The city health department at Dayton, Ohio, has issued a statement, showing that the lowest prevalence of diphtheria for many years in Dayton has been in the last year up to November 1. However, in the last six weeks, there were eight cases in a school of 675 pupils. The city health department discovered sixteen carriers, including one teacher, who were removed from the school. In an effort to prevent the further development of cases, about 1,200 nose and throat cultures were taken. There were only four deaths from Diphtheria this year up to November 1.



NEW FORMS OF SNELLEN VISION CHARTS
Two new forms of the Snellen standard charts for testing vision have been prepared by the National Society for the Prevention of Blindness. The form at the left is used in testing persons who can read; that at the left, those who cannot read. The new charts have been developed as a means of actually standardizing the Snellen charts, of which there is a confusing multiplicity.

—The state health department of New Jersey, in a recent statement, points out that fully 350 communities in the state are carrying on a continuous child-hygiene program under the supervision of the department. There are 116 child-hygiene nurses, 19 of whom are paid by the state health department, 86 entirely by cities, and 11 partly by the state and partly by the cities. In the preschool clinics, a total of 2,392 children have been immunized against diphtheria, and more than 9,000 Schick tests and immunization tests have been made among school children in the communities where these nurses are employed.

—Beginning with the fall opening of school, the board of education of Joliet, Ill., furnished free meals to undernourished children whose parents are too poor to pay for them. This service is made possible through the unique will of the late August J. Belz, who left an estate of $45,000, the income from which is to be used for this purpose.

NEW SCHEDULE FOR JANITORIAL SERVICE

The school board of Racine, Wis., has adopted a report of the special committee on janitorial duties, providing for a new schedule of work for each janitor and rules governing the various duties. The rules are as follows:

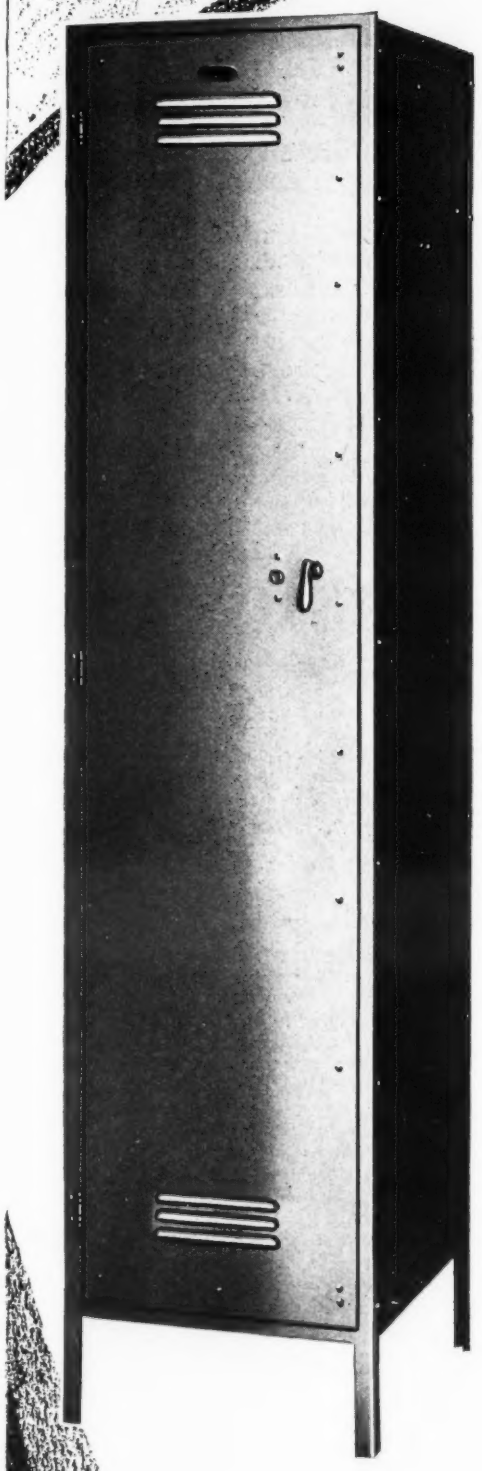
1. A new schedule of hours will be followed in buildings where more than one person is employed in that capacity.

2. Additional men will be put on at night, or part day and night in certain buildings, during the school year, and especially during the period of night school, and where social activities are carried on in the buildings.

3. A two-weeks' vacation period and one-week sick leave will be granted.

4. The schedule of salaries, beginning with July 23, 1928, will be as follows: Janitor-engineer, $1,755 per year (base salary); night men, $1,625 per year; janitors (class A), 1,495 per year; janitors (class B), $1,365 per year; janitresses, $1,062.50 per year. Additional units over the present base of nineteen units per building will be $25 per year.

NORWEST



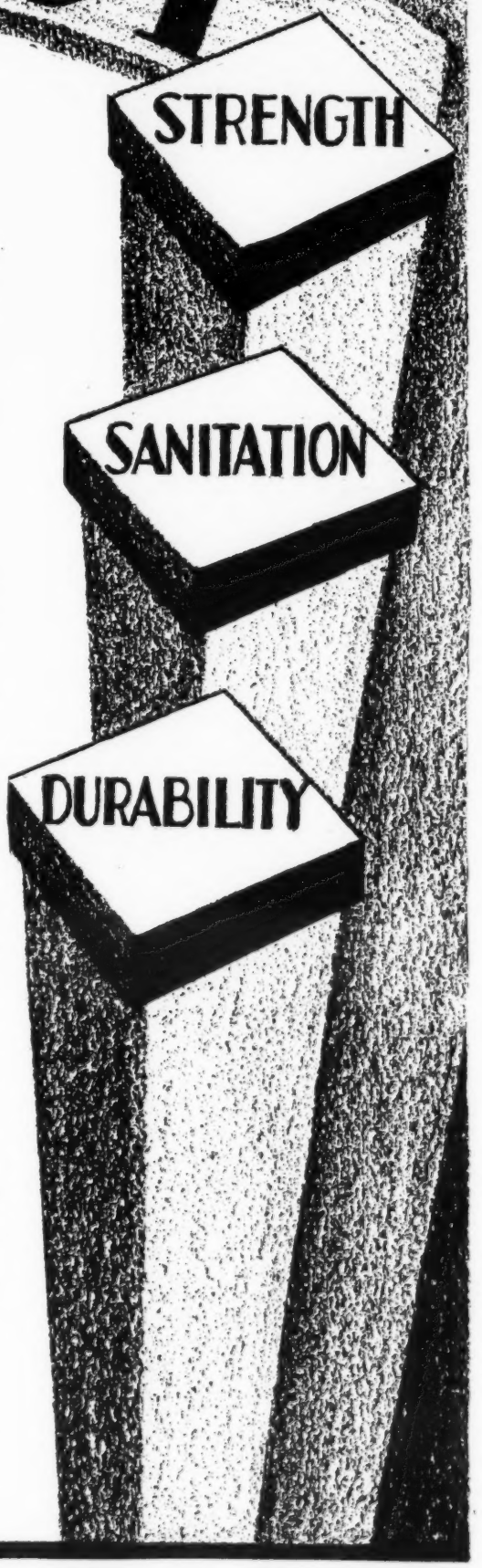
"Mother Used This Same Locker When She Was at Francis Parker"—

It is more than eighteen years since the Francis Parker School (Chicago) bought their first installation of Federal-Norwest lockers. Some of the original users now have children of their own attending the school and they are using the self same lockers.

After eighteen years of the tremendously hard usage given it by hundreds of healthy, happy children this Federal-Norwest steel equipment is still in good, thoroughly serviceable condition.

Only a *very* good, well-made locker indeed, could withstand such a terrific "endurance" test. It will be well worth your while to investigate Federal-Norwest steel lockers, gym equipment, etc. for *your* school. ☞ Shall we send literature?

Our highly trained Locker Engineers are prepared to advise on any contemplated school installation. Consultation involves no obligation.



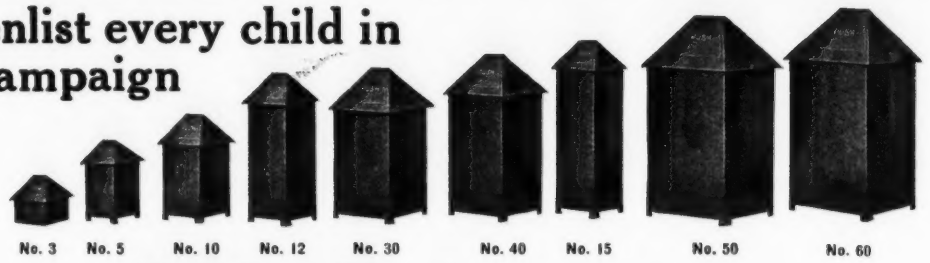
NORTH WESTERN STEEL PRODUCTS CO.

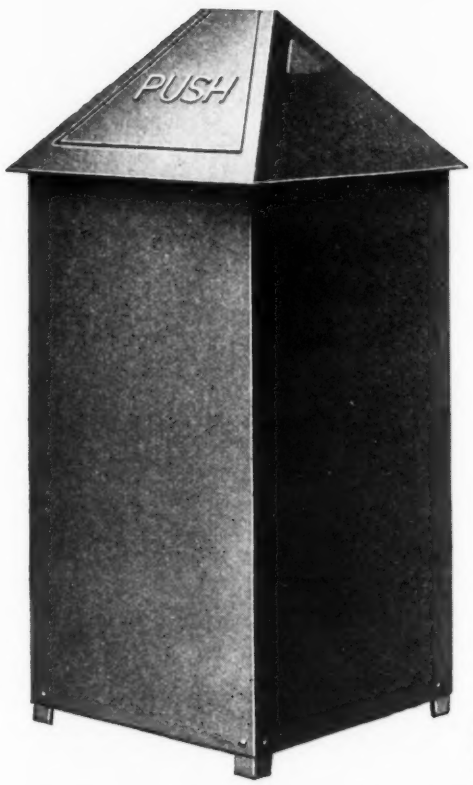
(SUBSIDIARY OF THE NORTH WESTERN EXPANDED METAL CO.)

1264 Old Colony Bldg. - - - - - Chicago

ENLIST THESE SILENT SENTINELS

And they—in turn—will enlist every child in your school in an active campaign against scattered waste





There's a SOLAR *for every use*

Did you ever think of enlisting your children in the daily campaign against scattered waste? It can be done—and easily.

Place SOLARS, the Silent Sentinels of Sanitation, at certain strategic points throughout your building and about your school grounds — then check results.

It is an absolutely proved fact that SOLARS *impel* use — that children actually go out of their way to deposit waste material within the fascinating SOLAR cover—the cover that swings open at the lightest touch yet which instantly and automatically closes again against contamination.

Your janitor will like them, too. They will shorten his cleaning time because he simply removes the inner container with its contents without disturbing the SOLAR.

Enlist the children. They will be eager to help if SOLARS are handy.

Investigate!

SOLAR-STURGES MFG. CO.
Melrose Park, Illinois

Wherever waste accumulates

STANDARDS FOR COMPOSITION BOOKS

The division of simplified practice of the U. S. Department of Commerce has adopted new standards to govern stock varieties of composition books. The standards which relate to ground-wood paper, writing paper, covers, and ruled stock are as follows:

Ground-wood paper. Not more than two grades of ground-wood paper may be used by any one manufacturer. (Basis of weight—17 by 22 in.—16 lb., ream 500 sheets).

All wrappers and cartons for composition books having leaves made of ground-wood paper shall be labeled as follows: Ground-wood paper, 17 by 22 in.—ream 500 sheets.

Writing paper. Not more than four grades or qualities may be used, and each grade or quality may be run in four different weights, the basis of the weights as follows: 17 by 22 in.—16 lb., 18 lb., 20 lb., and 24 lb., to a ream of 500 sheets.

Writing paper may be hard-sized and suitable for writing on with pen and ink. Written characters made with standard record writing ink (U. S. government master specification No. 163) shall be clear-cut and show no tendency of the ink to spread or to penetrate through the paper.

Books made up of writing paper of the above qualities may be labeled as follows: "This book is made of writing paper free from ground wood and is suitable for pen and ink writing in accordance with simplified practice recommendation No. 84, composition books."

All wrappers and cartons for composition books having leaves made of writing paper of the above grades may be labeled as follows: Writing paper, free from ground wood, 17 by 22 in.—16 lb., 18 lb., 20 lb., and 24 lb., ream 500 sheets.

Covers—Grades of stock. Four grades of cover stock, in weights not less than those specified shall be used as follows:

Bristol board in not more than three colors, 28 by 34 in.—140 lb., ream 500 sheets.

Imitation or mottled pressboard, in not more than three colors, 28 by 34 in.—140 lb., ream 500 sheets.

Genuine pressboard, 28 by 34 in.—65 lb., ream 144 sheets.

White coated, 28 by 34 in.—160 lb., ream 500 sheets.

Printing. Covers may be plain or printed in one, two, or three colors or lithographed on cover stock as above.

Covers requiring special imprints may be manufactured as specials, but units of less than 5,000 of a number in standard counts, qualities, weight of paper, and cover stock are considered the minimum at which operating efficiency may be obtained.

Number of Leaves. Crown size, 7 by 8½ in., 18, 20, 22, 24, 26, 28, 30, 36, 40, 48, 50, 54, 60, 70, 72, 84, 90, 96, 100, 110, 120, 144.

Number of Leaves. Demy size, 8 by 10 in., or 8 by 10½ in., 10, 12, 14, 16, 18, 20, 22, 24, 30, 34, 36, 40, 42, 48, 54, 60, 66, 72, 84.

The standards which became effective September 1, are subject to annual revision by the standing committee of the division of simplified practice.

RULES GOVERNING TRANSPORTATION IN VIRGINIA

The state board of education of Virginia has adopted new rules governing pupil transportation in the state. The rules which were passed in September, 1928, do not become effective until September, 1929. It is urged, however, that the enforcement of the rules be carried out as far as practicable during the current school session. The rules cover such items as the operation of the school bus, the qualifications of the bus driver, and the general regulations governing the operation of the bus. They read as follows:

1. School Bus

a. A bus shall be of the regular school-bus type or provided with a regulation school-bus body.

b. The bus shall have a closed body to protect the children in bad weather.

c. The bus shall provide a seat for each pupil to be transported.

d. The bus shall carry on the front and rear, in letters not less than ten inches, the legend "School Bus."

2. Driver

a. No person shall be engaged to drive a school bus, whether the bus be owned by the school board, or by an agent under contract with the school board, unless he be 21 years of age or have the training, experience, and maturity approximately equal to the average person of such age.

b. No person shall be employed as a driver of a bus about whom there is even a suggestion of suspicion that he uses intoxicating liquors.

c. The driver shall give evidence of substantial moral character and ability to preserve good order on the truck going to and coming from school.

d. No one shall be employed to drive a school truck unless he has had ample experience in handling a car and is known to be a careful and cautious driver.

e. The driver of a school truck, whether the truck be owned by the school board, or by the agent employed by such board, shall be under the general direction and control of the superintendent and county school board, and shall be amenable to the principal of the school to which transportation is furnished.

f. The driver shall report to the principal on the conduct of the students while on the school bus and shall be guided by the principal's advice and direction, subject to the control of the school board.

3. General Regulations

a. In transporting children to and from school no school bus shall be operated at a speed exceeding thirty miles an hour.

b. No children shall be permitted to ride on the outside of the bus, or to use the bus in any fashion, unless a definite seat be assigned to the student.

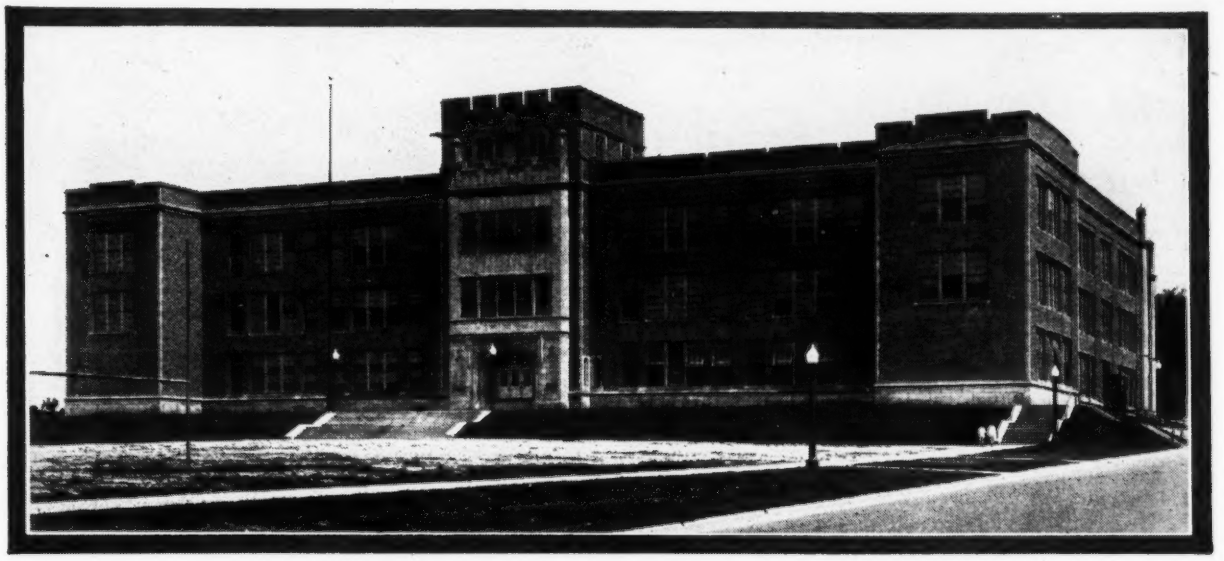
c. In taking on and disbursing children, the bus shall pull up to the extreme edge of the road, and shall not be put in motion until the children have been seated, or have cleared the bus in getting off.

d. The greatest care and precaution must be exercised at all times in handling school-bus transportation of children.

e. While no legal responsibility rests upon the board in the case of children injured in transportation, yet there is a moral responsibility. School boards are therefore urged to carry reasonable insurance in order that proper assistance may be given in case of accident.

f. School busses should be carefully inspected by a competent mechanic immediately before beginning transportation on school routes and at stated intervals during the session, not less frequently than once each month.

—Janesville, Wis. The school board has taken up the matter of a long-time school-building program, to involve an expenditure of approximately $400,000. It is planned to purchase the necessary sites immediately, and then to perfect plans for the construction of buildings as the necessity arises.



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Barreled Sunlight Semi-Gloss is widely used on surfaces that require less than a full gloss. It has a beautifully soft lustre and washes readily.

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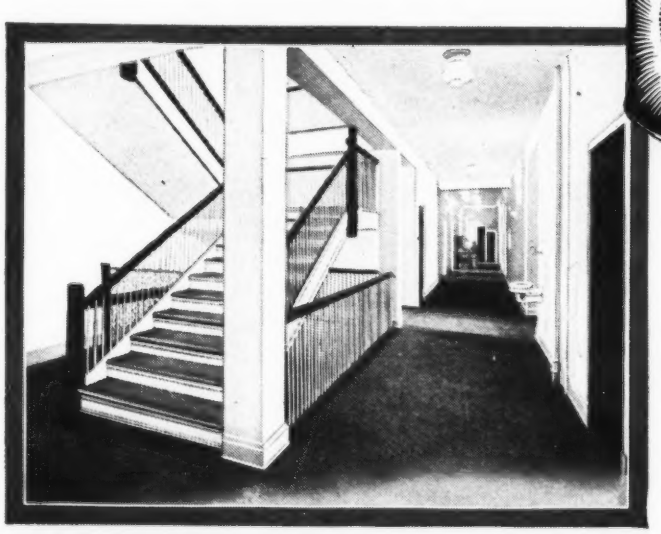
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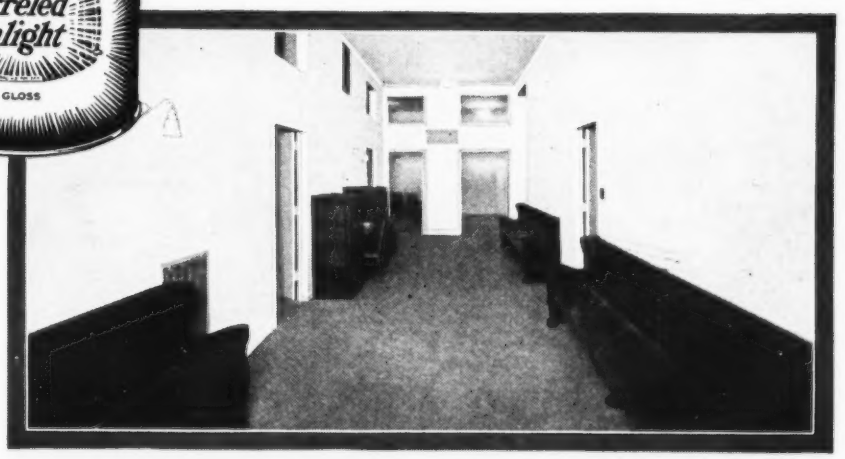
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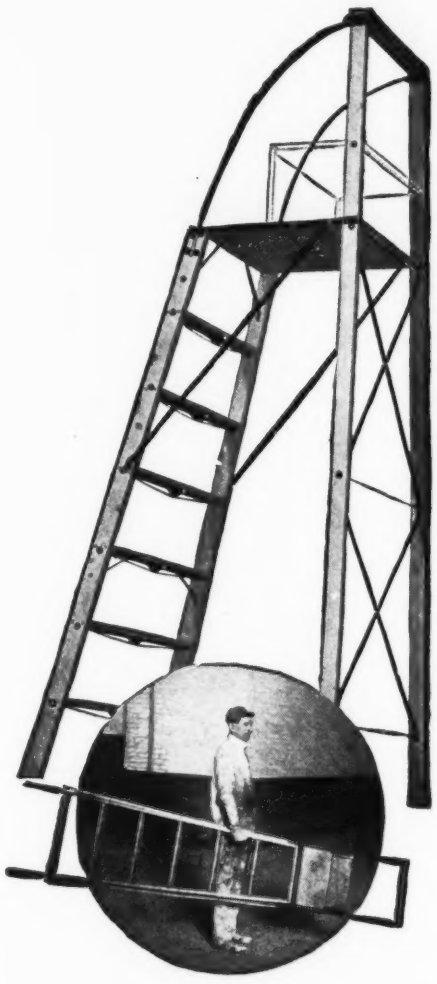
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RELATION OF SUPERINTENDENT AND TEACHER

At the recent Seneca county, Ohio, teachers' institute, Dr. Lee Driver entered upon a discussion of the relation of the superintendent and the teacher. In part he said:

"The superintendent knows and understands the problems of the teacher, with whom he is in full sympathy. The teacher, then, ought not hesitate to carry her problems to him, no matter how small or insignificant they may seem. Practically all teachers want to do the very best they are capable of doing. Redirection through constructive, helpful supervision, rather than criticism, is most needed. The teacher grows through the increase of her virtues rather than by the removal of her defects.

"In general there are two problems that confront the county superintendent. The first is the young, beginning teacher, full of interest, vim, and enthusiasm, but greatly in need of redirection. Oftentimes, the beginning teacher does not really keep in touch with the thing she is doing. The problem here is to get the teacher headed in the right direction, in other words, 'to get her feet on the ground.'

"By far the greater problem is that presented by the older teacher—the type that simply teaches from year to year without any material growth.

"Both the beginning and the older teacher are materially helped by having a 'good, hard, common sense, the best stock in trade,' and a saving sense of humor, 'one of the salvations of the teacher.'

"The teacher ought to attempt to impress the superintendent favorably when he visits her class. Attention paid to small matters of detail commonly overlooked will result in large returns to the teacher."

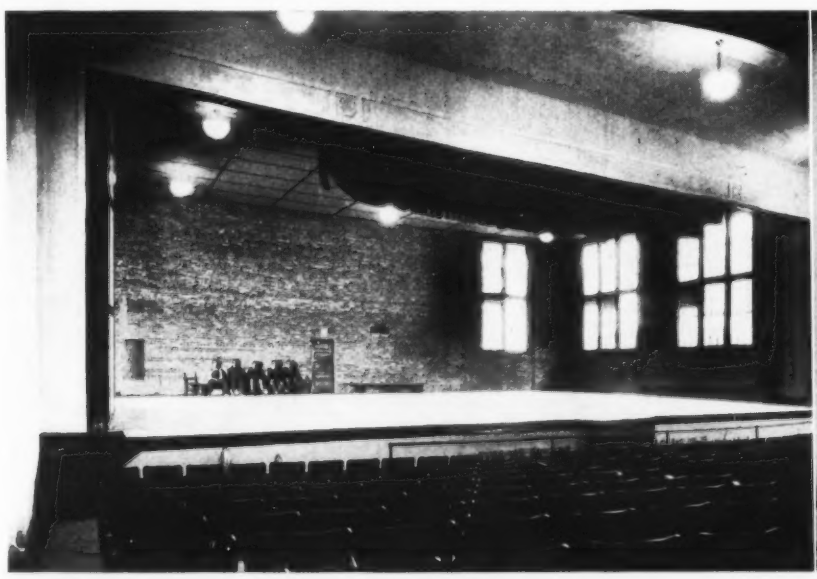
TEACHER UNEMPLOYMENT IN NEW YORK

—The number of unemployed teachers in New York City will be materially increased by Feb. 1, 1929. There are now 455 men and women on the list who have been waiting for appointments for nearly a year. Within a few weeks 750 more names of teachers will be added to the list. This will bring the total waiting list to nearly 2,000.

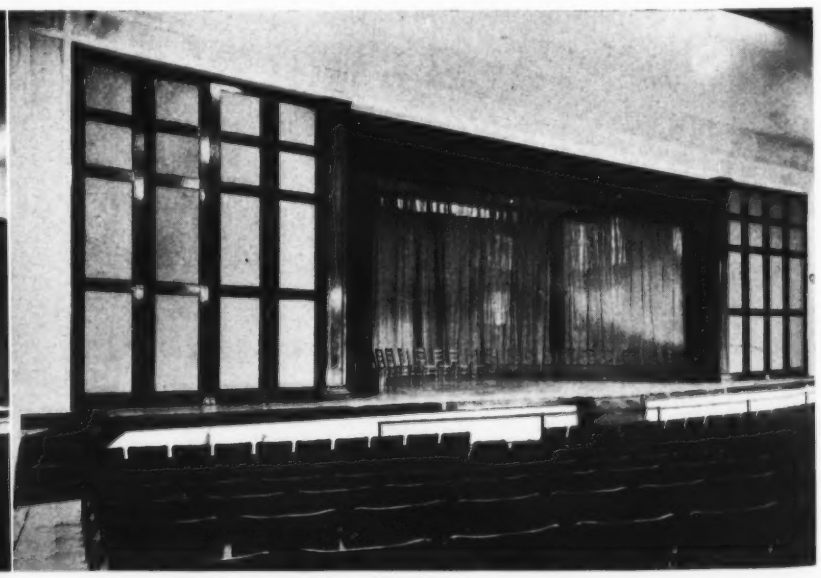
Men teachers face much more serious unemployment than women inasmuch as it is the custom of the superintendents to assign men only in grades of the 5th and 6th years. This limits appointments in the ratio of about one man to eight women whereas the present ratio on the waiting lists is one man to three women. There are 282 men and 891 women on the license No. 1 lists.

The Association of Unappointed and Unemployed Teachers is conducting an active campaign for the relief of the unemployment situation. It is urging the school officials to increase the opportunities for substituting for more of their number pending regular appointment.

There is no present indication as to the number of teachers who will be appointed in February. Normally about 400 to 500 would be named.



STAGE GYMNASIUM



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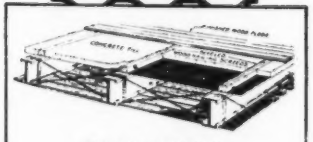




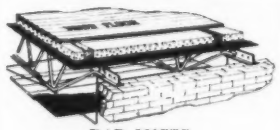
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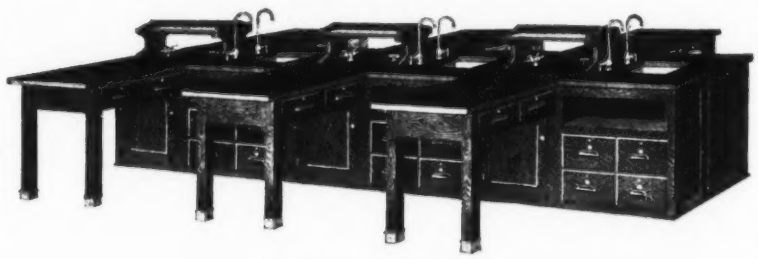
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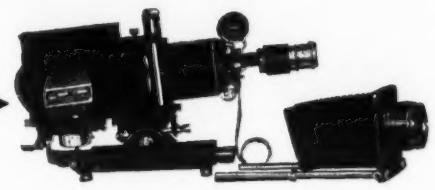
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HARCOURT LABORATORY EQUIPMENT

PRINCIPLES UNDERLYING THE ORGANIZATION OF A SCHOOL BUILDING

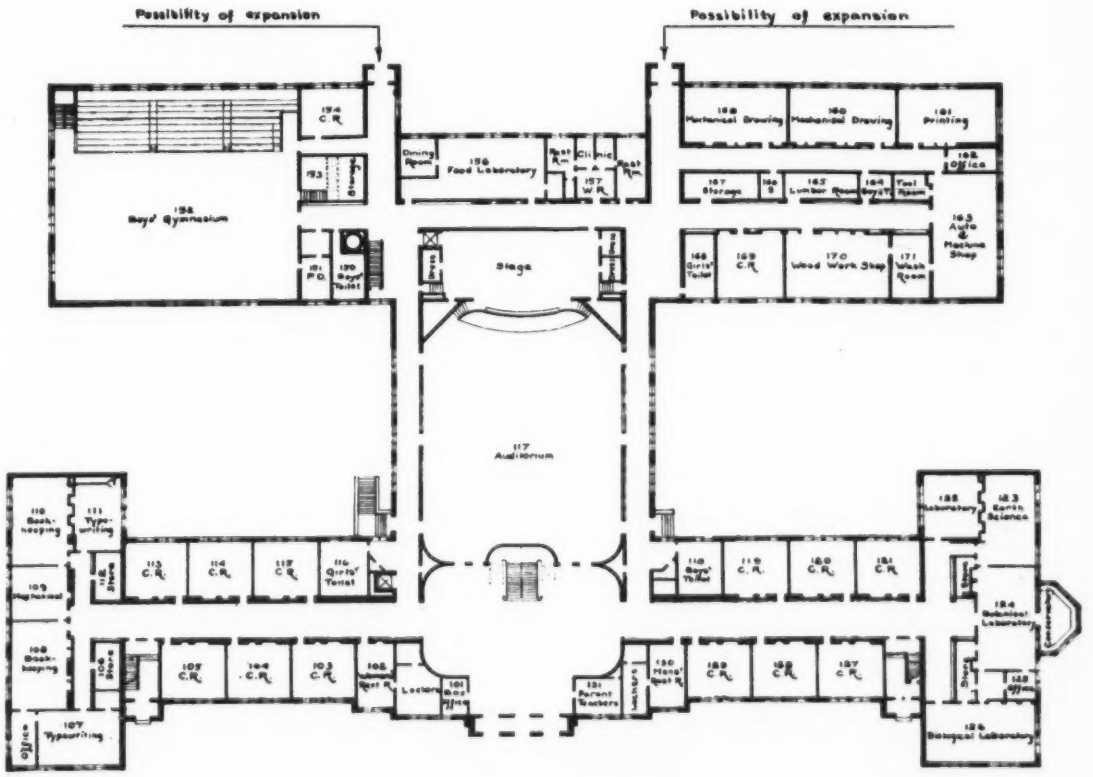
(Concluded from Page 38)

from the center. It will also be noticed that the auditorium is located so that it can be filled from all directions and emptied likewise in all directions, and also that it is easily available for community use.

Important Elements of Orientation

6. *Orientation.* Various school activities should be placed in the building so as to get the best use of sunlight and north light, and others so that they will function easily with the playground, the athletic field, or the school gardens. This principle is here called *orientation.* The best light for classrooms is probably that coming from the east or west. North light is probably best adapted for color work in the art department and for close work in both art and mechanical drawing. Science laboratories and lecture rooms should be located so that in case of necessity the sunlight can be used in experiments in general science, physics, or in the growth of plants. The gymnasium units should have a maximum of sunlight and should be located close to the available playgrounds and athletic fields. This will provide quick and easy access to the playgrounds and will help to insure outdoor physical activities. There may be other parts of the high-school building to which the principle of orientation applies in their placement, but those mentioned serve adequately to define and illustrate the meaning of orientation as applied to school-building planning. The floor plans of the East High School illustrate the application of the principle of orientation. It will be noticed that there is east and west exposure for classrooms, south and west for science laboratories, north for art rooms, and that the gymnasiums are placed near the playgrounds.

7. *Noninterference.* The application of the principle of noninterference means that those high-school functions which by their activities interfere with the operation of neighboring classes shall be placed so as to produce a minimum of interference. In other words, a music department with its choruses, its orchestras, and bands should be placed far from the center of the school, where these activities will interfere as little as possible with other quieter school functions. This applies equally to the gymnasiums and certain types of shops. The disagreeable fumes from chemical laboratories may annoy other classes, and the laboratories should,



FIRST FLOOR PLAN, EAST HIGH SCHOOL, DENVER, COLO.
George H. Williamson, Architect, Denver, Colo.



therefore, be located in a rather isolated part of the building. The same is true of the lunchroom, from which the odor of foods may permeate the building, and by the stimulation of the appetite interfere with the school program. The applications of this principle are shown again in the East High School floor plans. The physical-education department is placed toward the rear of the building where it will interefere only slightly with any other part of the school. The music department is placed on the fourth floor. The chemistry laboratory is on the third floor at one end of the building. The lunchroom is on the fourth floor.

8. *Association.* In a high-school schedule it is seldom that a pupil leaves one shop to attend class in another, or that a student takes two courses in science, or home economics, or art. For this reason there would seem to be no need for concentrating all art rooms, all science laboratories, or all shops in the same part of the building. But it should be remembered that the schedule of classes does not govern all cases of building organization. All science teachers are associated in a common field, and one teacher may have classes in both biology and physics, or physics and chemistry, or in all three for that matter. A home-economics teacher may teach both in foods and in clothing laboratories. A shop teacher is not always confined to the same shop, and a commercial teacher may conduct classes in both typewriting and bookkeeping. In schools where there are department heads, the work of such officers is greatly facilitated by concentration of the different units of their departments. In other words, there is a close association of interests and activities between the different units of any school department which seems to be adequate justification for grouping associated activities of the school. This may be called the principle of association. It will be noticed that this principle has been employed in the East High School floor plans.

LITTLE BUT IMPORTANT THINGS OFTEN FORGOTTEN IN SCHOOLHOUSE PLANNING

(Continued from Page 40)

two or more brass sliding poles for quick access from track to floor.

Radiators in the gymnasium may never be placed below 6 ft. unless recessed under the windows, and protected with wire-screen guards.

The doors to the gymnasium must, if possible, be flush with the inside wall. The doors themselves should be flush, never to open in, and should be controlled by door checks and door stops.

Skylights, when necessary, and in colder sections of the country, should have radiators or coils placed near the glass in order to keep the air warm and to prevent cold air from falling upon the players from above.

Shall there be a special room for boxing, wrestling, and fencing?

If possible, it is desirable to arrange for heating a gymnasium separately from the rest of the building. This will be economical for the use of the room in the evening, or when the school is not in session.

Note: The concluding half of Mr. Donovan's paper, which will take up administrative offices, libraries, lighting circulization, and ventilating equipment, will appear in the February issue of the JOURNAL.—The Editor.

A CIVIC GROUP OF NOTE

(Concluded from Page 82)

The boiler room and coal storage are located under the gymnasium. Separate toilets are arranged near the main entrance for public use. On this same floor are located the shops.

The Classrooms

In addition to the rooms mentioned, the junior high-school contains 17 classrooms, 2 study halls, each capable of seating 90 pupils, 2 laboratories, a lecture room, 4 commercial rooms, 2 studios, a millinery room, a sewing room, a cookery, a domestic-science suite, also 5 manual-arts rooms, pupils' restrooms, offices, and other auxiliary rooms.

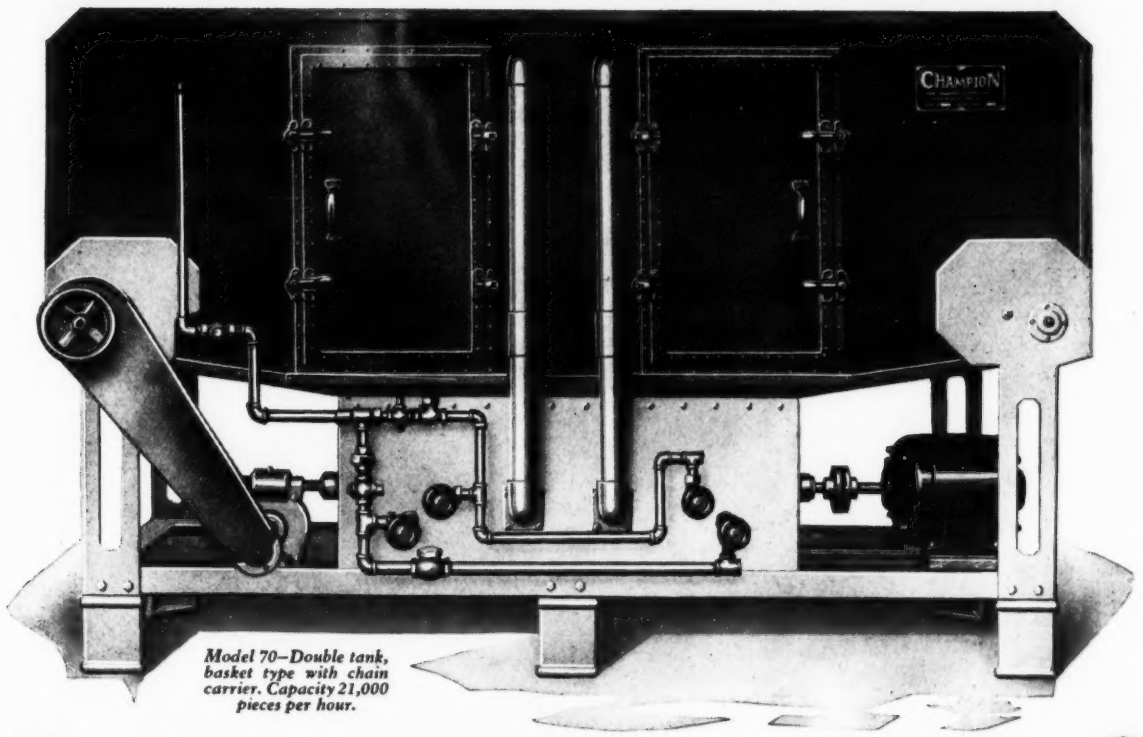
The floors in all corridors in the school building and in the offices of the town office building above the basement, are covered with battleship linoleum. All interior wood finish is of selected brown ash or chestnut, stained a soft brown. Classrooms are equipped with bookcases, teachers' closets, and wardrobes with bare, waterproof floors. The school portion of the building is of wood-floor construction, with fireproof corridors and stair halls, while the auditorium and town-office sections are entirely of fireproof construction.

The Mechanical Equipment

The plumbing, heating, and electrical installations are modern. A forced ventilating system is used. The heating plant is arranged in four separate units of control from the single plant, so that any or all portions may be used as desired, all thermostatically controlled. Plumbing fixtures are supplied with hot and cold water, and all rooms in the school section are fitted with electric clocks and intercommunicating telephones. Each floor is also equipped with fire hose and fire extinguishers.

The building was designed by the M. A. Dyer Company, architects, of Boston, who were selected after very careful consideration. The firm has specialized in schoolhouse and other public buildings and is of high standing and recognized as an authority on work of this nature.

The site cost $90,000 and the general contract for the construction of the building was $501,096. The heating and ventilation cost $79,357, and the electrical work $20,283.



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Scientific Tests Have Reduced the Cost of Alterations

Mark G. Troxell

Insuring correct acoustics in a new school auditorium sometimes seems to be a matter beyond the control of school-board members. Nothing could be farther from the truth. The acoustical engineer has become so exact in his science that he does not have to enter the building whose faults he corrects. He may sit at a desk a thousand miles away and figure how to eliminate echoes and buzzes. In fact, he may locate sources of an echo in a building which has never been built, as well as issue definite instructions for the improvement of acoustics in an auditorium already in use.

Several methods have in recent years been used to achieve correct reverberations and to eliminate "dead spots" in school auditoriums. The procedure most commonly followed is to install sound-absorbent material in walls and ceilings. This may be done in a way that leaves the repairing unsuspected to the average eye. The feltlike strips are incased in thin metal boxes a foot or more square, and the completed "tile," when affixed to a ceiling, looks decorative rather than corrective.

An Example of Acoustical Treatment

Take, for example, the East Side High School, Madison, Wis. When this building was completed, at a cost of nearly $1,000,000, it had a spacious auditorium, which had been designed to care both for school needs and for public functions in East Madison. The large rectangular room had no curved walls to create acoustical disturbances, but its proportions were such as to cause excessive reverberation. At a cost of about $6,000, the hall was partly ceiled with neat metal tiles filled with sound-absorbent material, and the period of reverberation was thus reduced to almost the ideal figure.

The Elimination of "Dead Spots" in Auditoriums

Sometimes, after the proper period of reverberation has been obtained in an auditorium, one finds places in the room where it is extremely difficult to hear. These places, which are called "dead" spots, are caused by the concentration of reflected sound which is out of phase with the direct sound by one thirtieth of a second or more. To eliminate these spots, one must find the reflecting surfaces which cause them, then change the shape of the surfaces, or treat them with enough sound-absorbent material to eliminate the disturbing reflection.

Several methods are employed for the detection of these surfaces. An ingenious plan developed by Prof. F. R. Watson, of the University of Illinois, utilizes an arc light at the focus of a parabolic reflector. A beam of light and a hissing sound are emitted simultaneously by this instrument. The apparatus may be set up on the stage of the auditorium to be tested, and the beam of light directed against any portion of the room's interior. By placing mirrors on the surfaces against which the beam of light is directed, the path of the light after it is reflected may be noted.

A sound is reflected in the same manner as a light beam. In the testing of an auditorium, the sound may be heard distinctly if the ear is moved into the path of the beam of light. By assiduous manipulation of this apparatus, a thorough survey can be made of any auditorium, its "dead spots" plotted, and the causes determined. Then one may either change these surfaces in shape, or pad them with an acoustical material to eliminate the cause of the disturbance.

A second method, scientifically developed by Dr. Paul Sabine, of the Riverbank Laboratories, involves making the model of a cross section of the auditorium to be studied, and the production of a single, intense sound wave at the spot where the speaker stands. This sound wave is then photographed. The machine may be timed so as to photograph the sound wave at any increment of time after it has left the source. In this way, a series of photographs may be taken, each one showing the spherical sound wave as a ring, expanding away from the source. With a succession of these photographs, the progress of the wave may be noted, its reflection from the various surfaces studied, and the disturbing surfaces determined.

A third way of studying an auditorium's echo-producing surfaces is to lay out the significant sections of the room, then in each section take the speaker's location as a source, drawing lines or rays out against all the boundaries of the section from this point. The rays are assumed to reflect at an angle which is equal to their angle of incidence, and are projected back into the auditorium. These rays then show the paths in which sound travels after its first reflection. If a great number of these rays are drawn carefully, and the angle of incidence and reflection carefully measured, the resulting picture gives a fair idea how the sound acts in the auditorium.

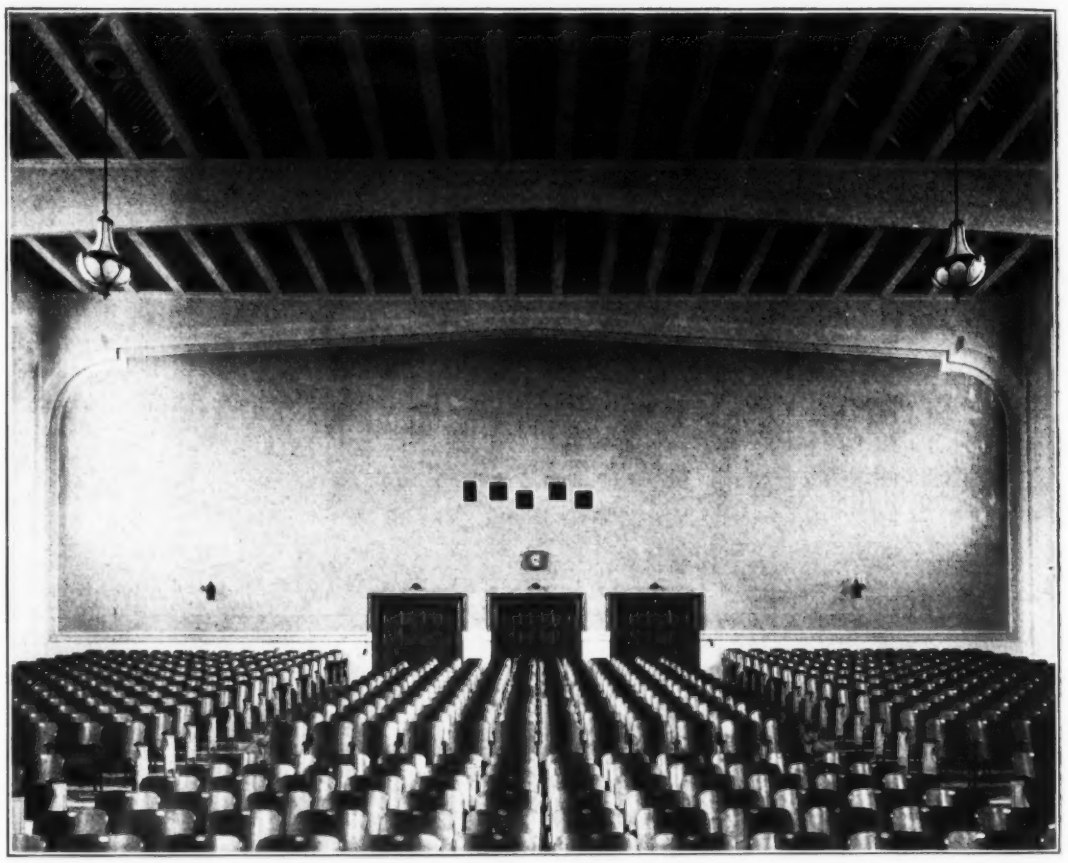
Another Method

This method, considered most practicable of the three for ordinary cases, consumes so much time that an accurate short cut was sought by the experts who must prescribe remedies. As a result, the procedure known as the Burgess method was developed.

How to Study the Effect of Reflected Sound

The significant sections of a room to be studied are usually the floor plan, the longitudinal section, and several cross sections. These are laid out in miniature on stiff white paper. The section to be studied first is placed on a flat surface, and a highly polished strip made of metal one-half inch wide is placed along the boundary lines of the section, the half-inch width being perpendicular to the plane of the section. The strip is bent to conform as closely as possible to the outline of the section, and is held in place by weights similar to spline weights. The section is then placed in a darkened room and a light, situated at the source of sound, is lighted. The reflections from the polished metallic strip make the same pattern on the surface of the paper as would be obtained if a draftsman carefully constructed lines representing all the beams of light from the same point and from the reflecting surfaces. Light rays instead of sound waves are used and observed. This method gives more accurate results than those of the drafting method, since drafting-room errors in working out angles of incidence and reflection are eliminated; it also obtains results in a fraction of the time required by the latter method.

In studying the effects of reflected sound in one immense room actually at fault, pegs or pins inserted at different points along the floor and balcony of the auditorium (in the cross section at points in which auditors would be stationed), proved exceedingly helpful. These pegs cast shadows pointing directly away from the surfaces from which the light was being reflected. By reversing the direction, and following these shadows, the surface causing a shadow was found.



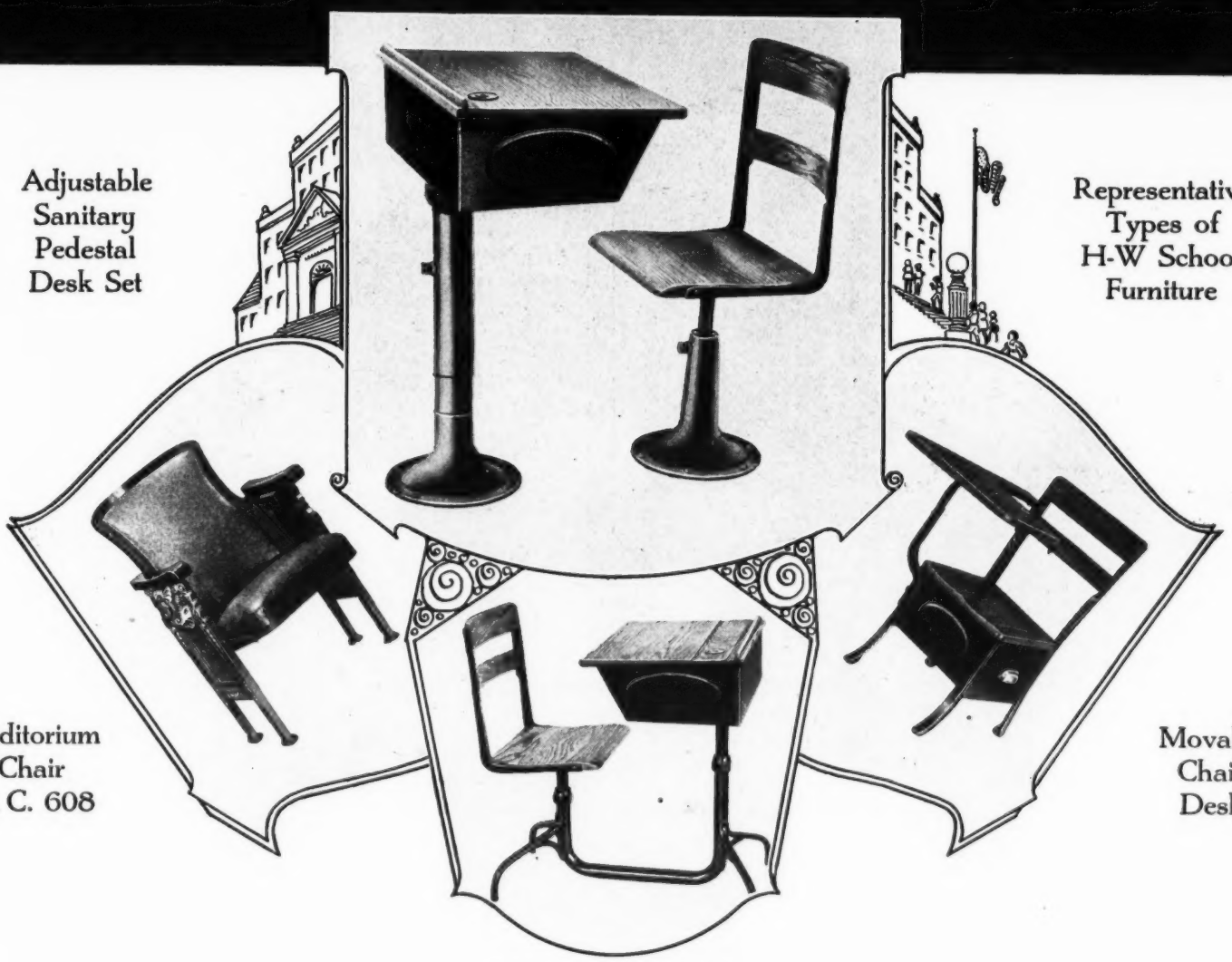
AUDITORIUM OF THE EAST SIDE HIGH SCHOOL, MADISON, WIS., AFTER THE ACOUSTICAL TREATMENT HAD BEEN APPLIED

Correcting acoustical trouble caused by badly curved ceilings involves rather expensive alterations. The ceiling surface above a school stage so handicapped must be changed so that its curve will start lower than it does at present. This curve will be carried gradually toward the lofty parts of the ceiling. In using a longer radius to construct the ceiling's arc, the reflected sounds emited from the stage become diffused instead of concentrated at some "dead spot."

Alterations in the walls of a completed auditorium are obviously expensive and tedious. But when plans have been drawn or when construction has barely started, the alert and experienced acoustical engineer, poring over the architect's plans, will look at the curves and recesses of the embryo room with an amazing professional understanding, making suggestions which may be readily incorporated into the building plans. Sometimes he advises merely the use of sound-absorbent material on walls or ceiling. The material must have a high coefficient of absorption, since all of the sound not absorbed will be reflected; and unless this reflection is materially reduced, the disturbance will not be eliminated. This fact seriously restricts the acoustical engineer's choice of materials. Such materials as plaster, ceramic tiles, composition tiles, and building boards are automatically eliminated. There remain only such materials as hairfelts, balsam wool, flaxlinum, and acousti-celotex. These materials must be at least 1 inch in thickness for echo-surface corrections; they may be covered with either no membrane or a porous membrane—one having from 20 per cent to 30 per cent free opening.

(Concluded on Page 161)

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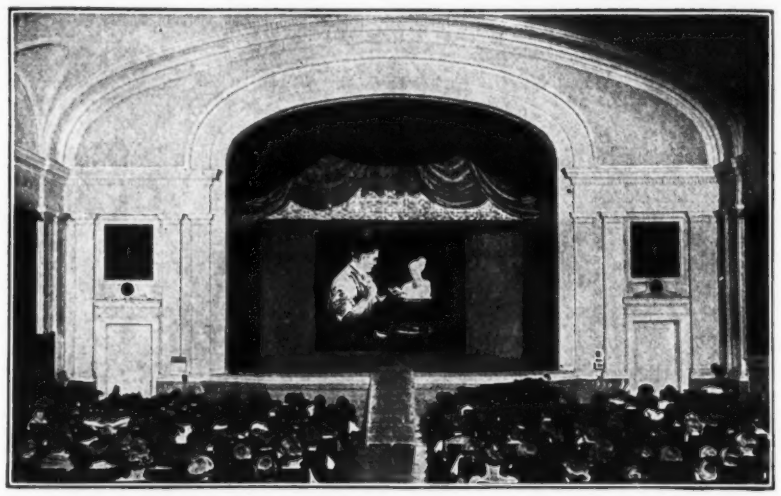
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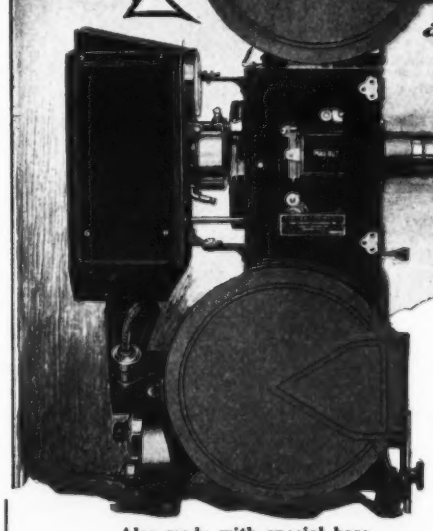
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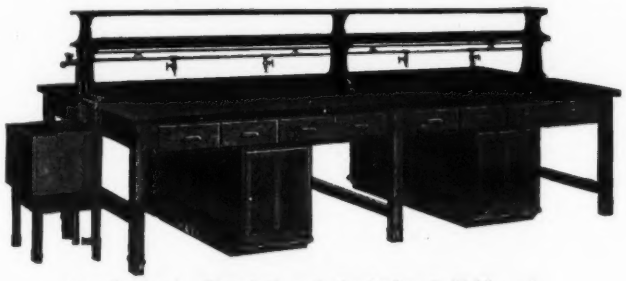
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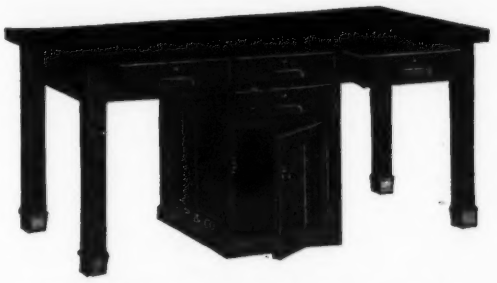
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(Concluded from Page 158)

One material often used is hard-surfaced, high absorption being obtained by drilling 400 holes per square foot into the board perpendicular to the exposed surface. It may be painted without a serious loss of acoustical efficiency.

Hollow metal tiles, made of perforated sheet steel finished in a baked enamel of any desired color, and filled with feltlike absorber, have been found satisfactory for school use. One example of corrective tile work was achieved in November, 1927, in the unique combination auditorium-gymnasium in the Wausau High School, Wausau, Wisconsin. The absorbing material is fitted into the back of the tile, and the whole is held in place by interlocking steel T-shaped furring members. The perforations in the tile comprise approximately 30 per cent of the surface, making the tile so transparent to sound waves that the full efficiency of the absorbent is brought into effect.

Metal tiles and solid wallboard cannot easily be used if the surface to be treated for sound absorption is curved, particularly if it is of the "orange peel" sort—curved like an inverted globe. Here the acoustical enginee. is likely to recommend membrane (strongly woven burlap) glued to hairfelt, which in turn is glued to the offending ceiling. One corporation uses oilcloth, punched full of small round holes, to protect the hairfelt when a metallic covering is undesirable. All of these materials are within the means of any school board, and many times they could be helpfully used to make "all seats equal" in an acoustical sense. Certainly they are not "all created equal" at the present time in an amazing number of high-school auditoriums.

THE SOUTH PASADENA JUNIOR HIGH SCHOOL

(Concluded from Page 48)

modates 32 pupils. Cross ventilation is provided from transoms opening on the arcades. The blackboards are slightly tilted from the top to eliminate reflection.

Science Laboratories

Beyond the library in the Oak street wing, are located the science laboratories. They consist of two rooms, connected by store rooms and a teacher's office.

Back of the main building, is located the 2-story shop building. On the first floor, slightly above the street level, is located the auto shop. On a level about four feet above the auto shop is located the electrical department and just beyond is the sheet-metal room.

A stairway connects this floor with the print shop, over the sheet-metal room. To the right, is located a large wood shop, supply room, finishing room, and lumber room.

The Gymnasium

Back of the Rollins street wing of the main building, is located the gymnasium. Down the center of the gymnasium is a partition which separates the boys from the girls. Later, a new boys' gymnasium will be built on what is now the athletic field.

Mechanical Equipment

Heating is by gas radiators in each room or unit of the buildings.

About three hundred horsepower of electric power is required to operate the plant. Two distinct electrical systems are provided, consisting of 110 volt single phase and 220 volt three phase power.

Inter-communicating telephones with automatic switchboard have been installed. Steel lockers have been placed in recesses along the arcades and in the halls. Steel trash cans are placed at intervals, in recesses, along the arcades.

A system of passing bells and clocks are operated from a master clock in the principal's office. Also the tower clock is under the control of the master clock.

The lighting of the building has received careful attention.

Fire protection is provided by a system of standpipes and hose. A closed fire-alarm system is provided, and connected with the local fire station.

The buildings were erected at a cost of $481,000 exclusive of equipment and grounds, or at a cost of $481 per pupil.

The buildings were erected from plans prepared by architects, Marsh, Smith, and Powell. Mr. H. J. Powell is responsible for the design and Miss Lucille Lloyd for the mural and Romanesque designs and painting.

South Pasadena Junior High School, South Pasadena, California
Construction Data

Date bids received	Dec. 28, 1927
Date construction completed	Sept. 18, 1928
Site	
Dimensions	334 by 486 ft.
Principal frontage	334 ft.
Building	
Use	Junior high school
Classrooms	11
Commercial department	2
Laboratory rooms	4
Library reading room	1
Librarian's office and workroom	1
Study hall	1
Commercial art	1
Fine arts	1
Public speaking	1
Music department	3
Offices	7
Book storage	1
Matron's room	1
Nurse's room	1
Clinic	1
Girls' restroom	1
Teachers' restroom	1
Auditorium	66 by 79 ft.
Seating capacity	1,000
Gymnasium	74 by 77 ft.
Design and Construction Materials	
Exterior design	Modified Romanesque
Exterior facing	Stucco
Exterior trimming	Stone and brick
Construction materials	Reinforced concrete and steel
Corridor and stair finish	Concrete
Classroom finish	Pine, painted
Auditorium finish	Bataan mahogany
Gymnasium finish	Pine, painted
Finish of toilet rooms	Keene cement and tile
Mechanical Equipment	
Type of heating and ventilation	Forced draft and exhaust
Temperature control	Automatic
Electrical equipment	Complete
Plumbing and sanitation	Complete
Cost and Pupil Capacity	
Cost of building	$409,053.64
Cost per cubic foot	20 cents
Pupil capacity of building	1,000
Building cost per pupil	$481
Total cost per pupil	$681

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rough and splintered—
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SOME DETAILS OF SCHOOL LIBRARIES IN SOUTHERN CALIFORNIA

(Continued from Page 56)

All except two of the libraries, had some kind of pictures; four schools had busts, and six had statuary. One of the schools has a very good collection of statuary poorly arranged.

All the libraries but one had clocks. Only four had filing cases in the library proper. All but four had book trucks. One library did not have a bulletin board. The average size of the bulletin board was about 2 by 3 ft. Some of the libraries had a small supplementary board as part of the magazine rack.

Five libraries were without pamphlet files. One of these used the regular bookshelving for this purpose. Seventeen libraries had picture files, usually made of oak, to match the rest of the furniture.

Twelve libraries had a telephone connected with the local telephone system, four had school telephones, and one had both city and school telephones. Eight had no telephone connections.

Library Offices

The offices for the librarian were very inadequate. Eleven schools had no office. In most of the remaining schools, the office seemed to be of very secondary consideration as far as the library layout was concerned. The location, size, and equipment of the best librarian's offices observed may be of interest:

1. Located at the south end of the library, 12 by 15 ft. It contains two typing desks, two typewriters, three chairs, a school telephone, a section of bookshelving, 3 ft. by 6 ft. 10 in., and a coat closet.
2. Located at the side of the library, 8 by 12 ft. in size. It contains two desks, two chairs, two cupboards, two lockers, and 12 linear feet of shelving 7 ft. high.
3. Located at the left of the library entrance, 10 by 12 ft. in size. It contains two chairs, a single-drawer letter file, a nine-drawer card case, a telephone, a typewriter, a typing table, and three sections of shelving 3 by 5 ft.

A workroom for the librarian was provided in 21 of the schools. This varied from a room with a small pine table to one with a special workbench, shelving, desks, typewriters, and tables. The general provision was a room about 15 ft. square, at one end or side of the library.

The Santa Monica High School had the best arrangement of the office, workroom, and classroom for the library. Here the librarian's office was directly back of the charging desk, which was located near the center of one side of the library. On one side of the librarian's office was the workroom, and on the other the classroom. Doors opened from the librarian's office to the charging desk, to the workroom, and to the library classroom.

In the schools under consideration, the librarian's workroom was used to catalog and classify books and to make minor repairs. (It is the practice to send out books for rebinding and major repairs.) The equipment necessary seems to be a zinc-covered table in the center of the room, four chairs, a typing desk, and a typewriter. Shelving is placed along one or two sides, and supply lockers, a lavatory, and a work shelf occupy another side.

Conclusions and Recommendations

The conclusions reached from the study may be summed up in the following statements:

1. The floor area allowed for the library should be 25 sq. ft. per seat. This agrees very closely with present practice of 20 to 25 sq. ft.
2. The entrance from the corridor should have double doors, swinging both ways, and located near the middle of the library.
3. The charging desk should be at one side of or opposite the entrance and directly in line with or in front of the librarian's office or workroom.
4. Where no office or workroom is provided, the librarian should have a work desk alongside of the charging desk.
5. A standard charging desk of the U-shape type should be provided for all schools above 500 enrollment, and in smaller schools where it can be afforded and space is available. In the smaller schools, a straight type of charging desk can be used. Either type of desk should be purchased from a reputable maker and not made by the general contractor.
6. Battleship linoleum is the most desirable floor covering, on account of its wearing, cleaning, and sound-deadening qualities.
7. The average library should circulate between 25 and 30 books per year per student.
8. For adequate service, the high-school library should contain at least 2,750 books and more if possible.
9. The shape of the library should be rectangular. The minimum width should approach 25 ft., and the maximum should not exceed 40 ft. These widths are economical for construction. The rectangular room is easier for the librarian from a disciplinary point of view.
10. Seats should be provided for between 10 and 12 per cent of the school enrollment. In small schools this average may be considerably increased.
11. The table space per student should be between 3.25 sq. ft. and 3.5 sq. ft.
12. The number of students seated at one table should be not less than 6. No child should be seated at the end of a table.
13. Shelving space should measure between 7 and 8 books per square surface foot of shelving.
14. Calculations of the surface feet of shelving required should be on the basis of .75 sq. ft. per student.
15. The window area should be approximately 14 per cent of the floor area. In larger rooms of greater width than 25 ft., the ratio should be nearer 20 per cent.
16. Artificial lights should be 200-watt size. The wattage per square foot of floor surface should be between .6 and .7 watts. One outlet should furnish the illumination for 300 sq. ft. of floor space.
17. The following miscellaneous equipment should be provided: (*a*) magazine rack, (*b*) newspaper rack, (*c*) special bookracks, (*d*) clock, preferably connected with the master clock, (*e*) catalog card case, (*f*) book truck, (*g*) bulletin board (in the large library, one large and one small board), (*h*) telephone, (*i*) pamphlet file, (*j*) picture file, and (*k*) good pictures (one good picture is worth several poor ones).



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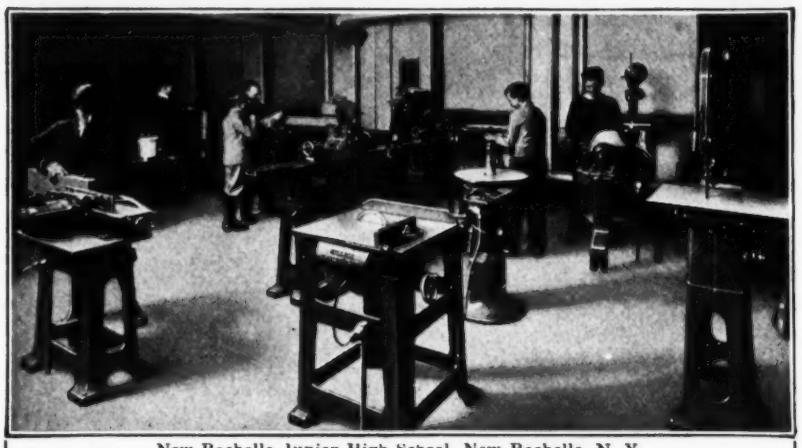
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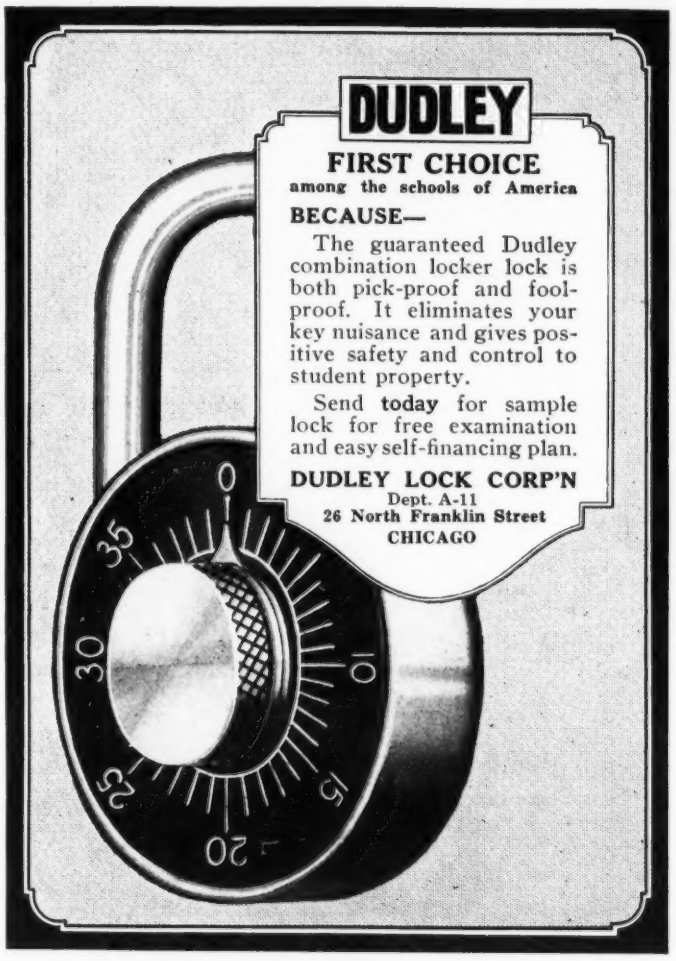
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Washes 165 lbs. clothes in 40 minutes

THIS is the popular Troy 36 x 54 inch Premier Washer for school work. Motor driven, with a monel cylinder and monel shell, it provides the same benefits and economies as the largest washers Troy makes.

The capacity is 165 pounds of clothes in 40 minutes.

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SCIENCE and RECITATION ROOM
THE SHELDON WAY

Sheldon builds 14 Multi-Service Table combinations for teaching general science, biology, and physics. The center pedestal design and the Efficiency-Chairs permit pupils to rise or sit down to the tables quickly and quietly, and aisles are never obstructed. Therefore, a room equipped with these tables will also serve as a recitation room, and can be used 100 per cent of the time. The table at the left may be equipped with open compartments, or two drawers, instead of the cupboard, when desired.

E. H. SHELDON & COMPANY
Laboratory, Home Ecomonics and Vocational Furniture
Muskegon, Michigan

REORGANIZING THE SMALL SCHOOL OFFICE

(Concluded from Page 54)

to cut out a section of a table top and fit into it a piece of plate glass. If the glass is carefully fitted, the use of the table for other purposes is not interfered with. By suspending an electric light under the glass, maps and other drawings may be readily traced.

The blue prints of the building should always be readily accessible for reference when repairs or alterations are being made, especially to electric-light wiring and plumbing. For this purpose, the blue prints may be rolled and stored in a dustproof case or they may be fastened in groups of three or four by means of clips to large sheets of heavy pressboard or beaver board. These sheets may then be placed in a wooden case where they are quickly accessible.

Where no cupboard for wraps, umbrella, and other personal belongings of the superintendent has been arranged for, a costumer or better still a full-length steel locker should be provided. The latter is not only better in appearance but also has rigid doors and locking devices providing safe storage for such articles. This is an important item when the superintendent must be out of the office much of the time to supervise classroom work.

The absence of a storeroom need not be a handicap in this day when steel storage cabinets are being made to accommodate almost every type of storage need. In fact, where space is limited, it is probably more economical to use storage cabinets rather than to have a certain amount of space walled off for storage.

In many older schools a waiting room is provided by means of a partition across the room. This darkens the waiting room so that it cannot be used for work purposes and greatly limits the available work space of the office. Where such a provision is deemed imperative, a smaller waiting room may be arranged with a glazed partition.

Very few schools can boast of a fireproof vault. A safe or a fireproof steel cabinet equipped with drawers for 5 by 8-in. record cards, as well as document files and one correspondence drawer will provide safe storage for those records and other valuable papers which once destroyed cannot be replaced.

The discussion thus far has dealt with the school office of small size. Where the available office is larger than one half a regular classroom unit, it is possible, by means of partitions, to provide a more satisfactory combination. This should provide for a clerical or general office and a private office, both adjoining the windows. The clerical office will have a counter built across one end so as to provide waiting-room space while a small storeroom opening into the general office may occupy the end of the room allotted to the private office.

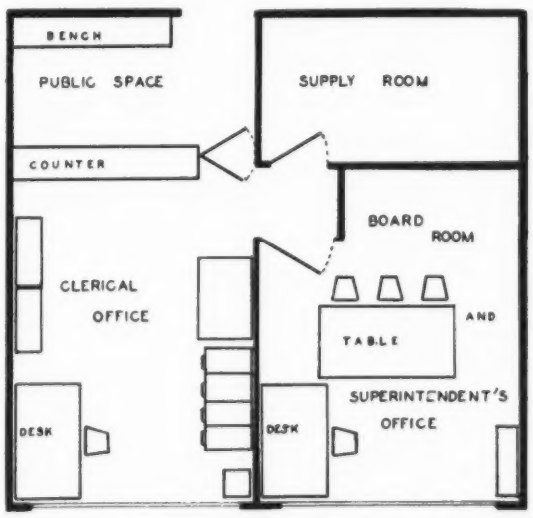


FIG. 4. SHOWING HOW TO PLACE PARTITIONS IN THE LARGER ONE-ROOM OFFICES SO AS TO SECURE GREATER PRIVACY AND EFFICIENCY.

The entrance to the superintendent's private office will thus be through the waiting space and the general office. The private office will be equipped with a desk and chairs, a conference table, and visitors' chairs. Bookcases and most of the files will be found with other equipment in the general office, where it will be more accessible to the teaching staff as a whole.

We have indicated in general the principles which should apply to reorganization of the small school office. As local conditions vary, it will be necessary to carefully study each separate office to determine the best possible arrangement for that particular school. One very effective way of doing this is to draw to scale, on a large sheet of paper, a sketch of the office indicating the location of doors and windows. Then draw to the same scale, on heavy paper or thin cardboard, the outlines of the desks, tables, bookcases, and other heavy pieces of furniture. Cut out these outlines and place them on the plan. By moving the outlines about it is possible to study the various combinations and to determine which will give greatest satisfaction.

Nothing has been said of the use of the office walls. Necessarily some wall space will be devoted to a map of the school district and to well-selected pictures. The district map will serve many purposes if it includes such data as the location of pupils' homes, bus routes, etc.

A final word should be said about the location of the offices. The office should be located as near the main entrance as possible, and the doorway should be plainly visible to the visitor as he enters the building. If the office is not so located, the direction from the main entrance



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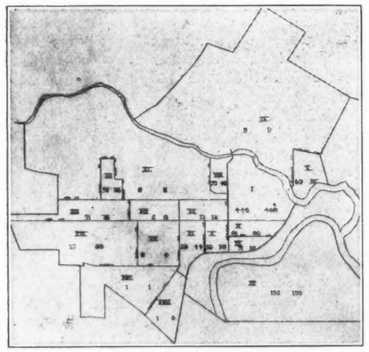
YAWMAN AND ERBE MFG. CO.
School and Library Equipment — Rochester, N. Y.

should be plainly marked so that there may be no occasion for strangers to wander aimlessly about the building in an attempt to locate the school office.

A CONTINUOUS REBUILDING SURVEY

(Continued from Page 51)

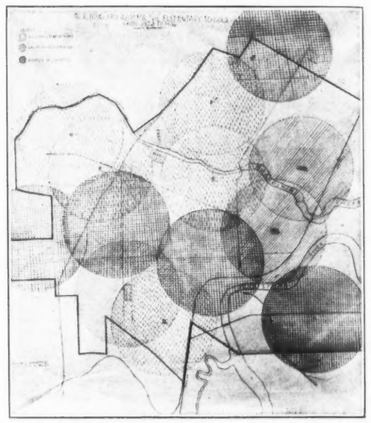
Map 6 shows the homes of all colored pupils in the first six grades only, in September 1927.



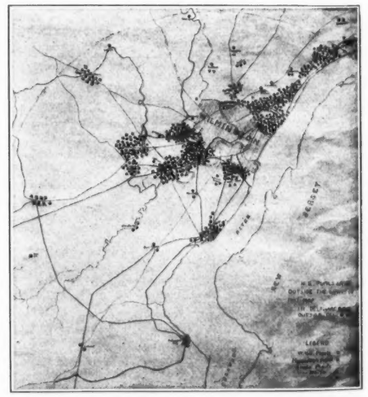
MAP No. 10. SHIFT OF HOMES OF COLORED CHILDREN

Map 7 shows the residence of elementary pupils attending private and parochial schools. There are three private schools and thirteen parochial schools in Wilmington. Some of the latter are large schools.

Many photographs have been taken, both inside and outside of the old schools. We find that our influential citizens do not get into the schools as much as they should and, unless they can actually see a school condition or a picture of it, our problems are not visualized and nothing happens. Pictures are a good investment for school authorities who want to convey vivid ideas of bad conditions to a great many people. It seems to be human nature to read casually about conditions that are very bad and to do nothing about them. The average man feels that "the writer probably exaggerated, or was injecting his own pet ideas, which are not to be taken seriously." Seeing is believing, someone has said. I remember in my New Hampshire supervisory days, we wanted a new school in the town of Conway. One morning I saw Mr. Crosby Kennett, the richest and most influential man of the town, passing the old school where his son attended. I took him on a tour of inspection; and while he lived only a



MAP No. 12. ULTIMATE AREAS OF ELEMENTARY SCHOOLS



MAP No. 13. LOCATION OF NONRESIDENCE PUPILS ATTENDING THE WILMINGTON PUBLIC SCHOOLS

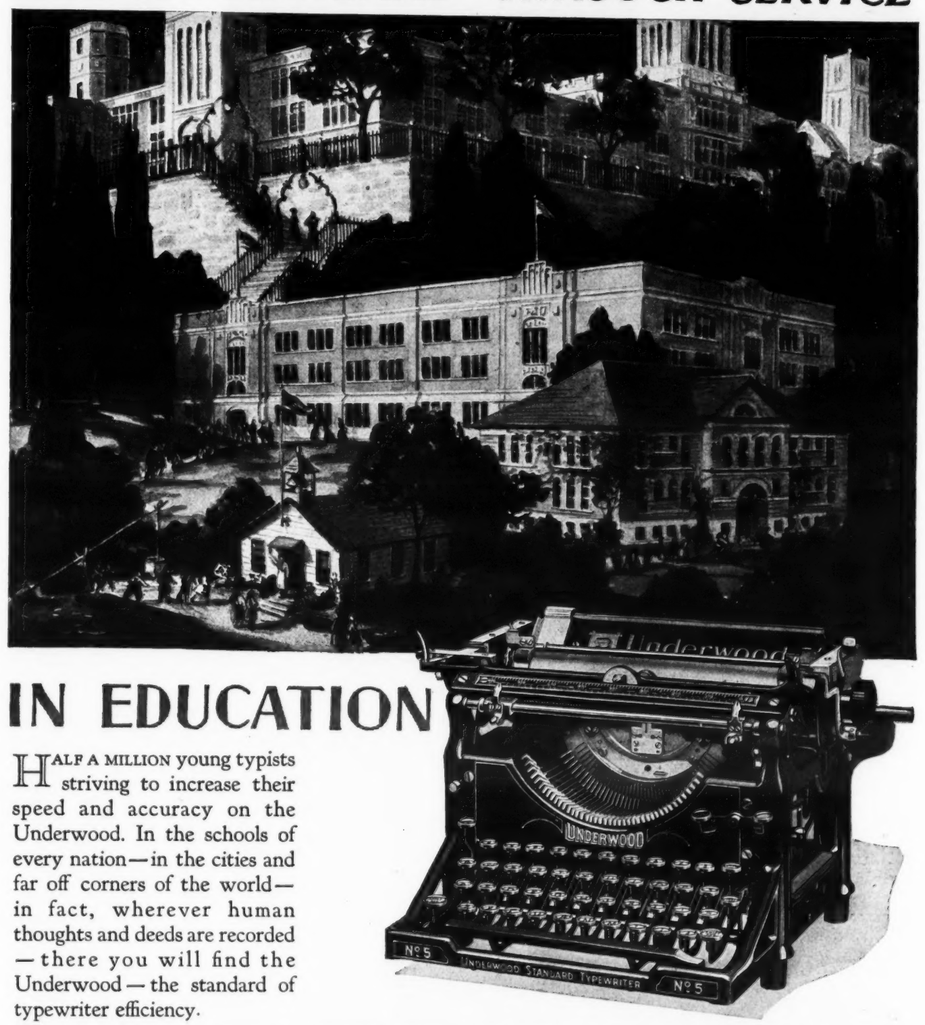
stone's throw from the school, he certainly saw things for the first time on that trip over and around that old school. Suffice it to say that it was not long after that visit before we had a new school building, the best elementary school in New England at that time.

The Annual Growth Studied

Where the children now live is not the only data required before deciding where to build. Is the community a growing one or is it static? To answer this question very positively we have each year taken the residential building permits, obtained from the building inspector, and arranged them not exactly by blocks, but by subdivisions of the 22 market areas. There are 53 of these subareas. The heavy figures on Map

(Continued on Page 169)

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IN EDUCATION

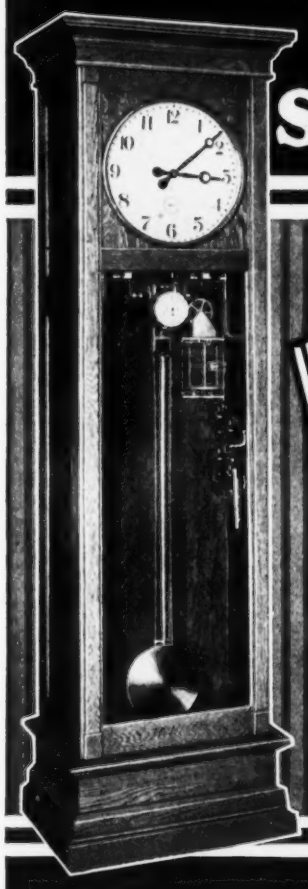
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look like other fine doors but internally they are vastly different, being highly efficient in retarding sounds, besides being edge-tight on four sides.



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sound proof doors and folding partitions are made to match any finish, and in sizes up to 19 ft. high x 60 or more in width.

This door is in the private offices at the Blum women's apparel store on Michigan Avenue, Chicago.

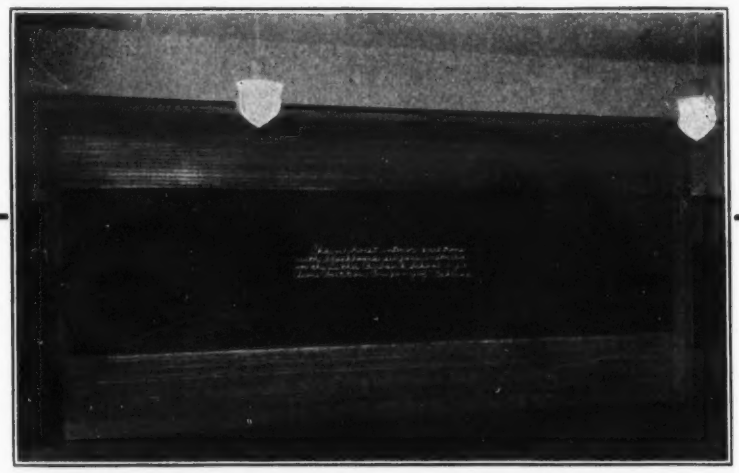
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Opening 30'-9" x 9'-9"

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The use of Acme Rolling Wood Partitions makes for efficiency in the modern school plant. The Acme Partition illustrated above provides a moving wall for practically the entire side of the room.

The blackboard surface shown is applied directly to the smooth surface of the finished wood.

The entire partition coils overhead out of the way, throwing two class rooms into one large room for assembly purposes.

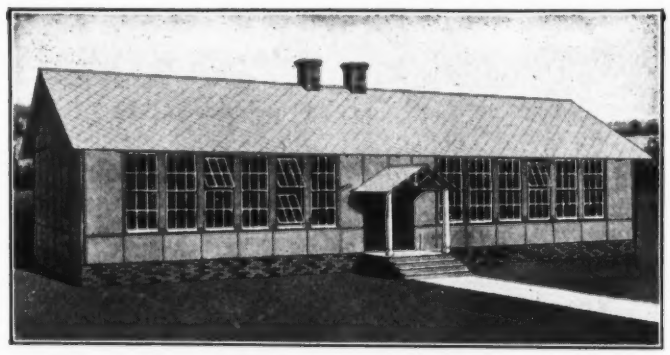
Easy operation by chain hoist or hand crank is accomplished by means of exclusive Acme ball bearing shaft construction.

Send for complete details.

ACME PARTITION COMPANY, INC.

Representatives in Principal Cities

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EXPECT MORE FROM AMBLER SCHOOLHOUSES

Expect more in attractiveness, **fire-safety**, and practical usefulness. A better investment. Lower upkeep. Easier heating. Better ventilation. Permanence.

All of these essentials you will find in Ambler schoolhouses. And the only other way you can secure them—including **fire-safety**—is in a masonry structure.

There are times and places for masonry buildings. But there are hundreds of cases where the enormous cost is not necessary and very inadvisable. Before you add schoolroom facilities, learn all about Ambler advantages. The informative catalog is yours on request.

Asbestos Buildings Company

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AMBLER

FIREPROOF ASBESTOS SCHOOLHOUSES

WELCH LABORATORY Vocational and Library FURNITURE



No. 2530

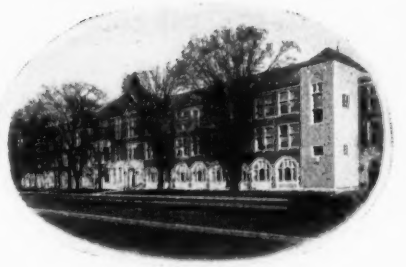
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Six feet long
Four feet wide
Thirty-three inches high

Accommodates four pupils—two on each side

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Birch top
Ebonacid finish

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Eastern High School

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(Continued from Page 166)

8 denote the dwellings constructed within the period of one year. It is interesting to compare this map with the maps of predicted growth.

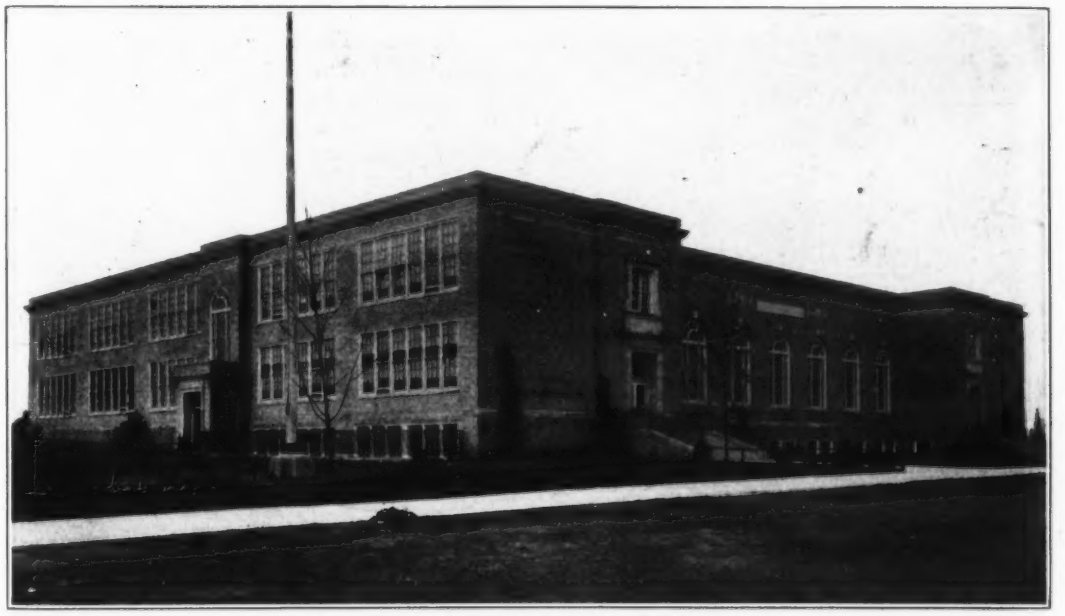
That the older parts of the city are not providing the raw material which make schools necessary, is shown very clearly in Map 9, which is a "birth" map of the city for one year. The information for such a map is usually obtainable from the health department and the hospitals. The sections where the new houses have been going up have not yet had time to show up very strong in this "baby" map, but they will be on hand not many years hence. The "baby" map emphasizes the need of good new schools in some of the older parts of the city.

Map 10 shows the change in the number of colored pupils in the primary schools in different sections of the city from September 1925 to September 1927. The original map is in black and red, but the 1927 figures may be distinguished from the fact that in every case they are to the right of the 1925 figures. The apparent decrease of five pupils is explained by the fact that in 1925 there were kindergartens, and in 1927 these were all temporarily suspended. The map goes with Map 6.

ESTIMATED FAMILIES

CITY OF WILMINGTON

Market Area	1922 Families	1928 Families	1934 Families	1945 Families
I	1862	1750	1620	1380
II	3425	3421	3419	3410
III	2212	2365	2550	2860
IV	1183	1230	1292	1405
V	3700	3780	3883	3988
VI	132	360	555	875
VII	1597	1730	1855	2035
VIII	578	710	855	1050
IX	429	480	560	640
X	166	335	530	785
XI	655	765	885	1075
XII	609	745	895	1135
XIII	1809	2015	2260	2601
XIV	492	760	1020	1390
XV	1832	2415	2980	3790
XVI	276	370	470	605
XVII	282	295	305	325
XVIII	1236	1300	1380	1495
XIX	175	750	1345	2160
XX	713	726	741	756
Total Families	23,363	26,302	29,400	33,750



THOMAS F. BAYARD SCHOOL, WILMINGTON, DEL.
Guilbert & Betelle, Architects, Newark, N. J.

The Future Building Plan

The Emalia P. Warner School, named for a public-spirited citizen who is still living, is the next school to be built. It will contain all the grades and first year of high school. Map 11 shows the residence of pupils in one of our grammar schools, No. 24, which will furnish 700, or about half of the pupils for the Warner school. Besides these 700 pupils who are enrolled in the seventh and eighth grades, there will be 300 ninth-graders. This will make a junior-high-school group of about 1,000 pupils. The remainder of the school will be made up of pupils in the first six grades. This is not an ideal arrangement, but there has been an insistent demand for all grades in this building. The location bordering on a park is ideal, the plans are excellent, and we are assured of another fine school.

The Ultimate Program

We have made up a table, starting two or three years ago, and going up to 1935, in which are given, by years, every school and its probable enrollment. This table provides for abandoning many of the old schools and opening new schools. In other words, this table carries the rebuilding plan to a complete conclusion. The last school to be built in the program is a senior high school

Let AN-DU-SEPTIC Teach Your Classes

Clear white marks on your blackboard, easily readable from all parts of the room, are half the battle.



AN-DU-SEPTIC Dustless Blackboard Crayons make pure white marks which erase easily. They are packed in the new metal box which keeps them safe from moisture and breakage. Your school supply dealer can stock you.

BINNEY & SMITH
41 East 42nd Street New York, N. Y.

BUILDING GRADINGS OF CITY SCHOOLS
PRIMARY SCHOOLS

School	Site	Building	Service System	Class Rooms	Special Rooms	Totals
30	89	128	168	236	31	652
29	60	121	141	202	20	574
23	95	104	146	211	9	565
9	53	112	148	179	57	549
13	80	99	129	215	12	535
20	73	98	141	159	13	484
19	89	83	152	147	3	474
15	75	85	128	172	10	470
2	39	93	145	157	24	458
25	58	105	105	180	5	453
7	78	64	139	157	7	445
26	52	94	104	185	5	440
27	79	77	83	192	9	440
12	62	83	125	158	7	435
5	57	88	93	178	9	425
17	43	64	139	161	5	412
8	70	66	125	137	7	405
10	41	64	117	175	8	405
22	27	85	122	132	31	397
21	72	99	94	121	10	396
11	72	64	122	111	15	384
3	51	64	117	120	7	359
14	40	66	90	136	2	334
6	30	37	140	118	5	324
18	37	39	48	154	0	279
GRAMMAR SCHOOLS						
28	104	111	128	171	38	552
24	78	94	123	168	57	520
4	65	71	130	161	17	444
1	64	42	140	113	14	373
16	37	49	100	108	44	338

RATINGS ACCORDED THE SCHOOLS ON THE BASIS OF THE STRAYER-ENGELHARDT SCALE

to cost not less than $2,000,000. We thought at the time when the table was first drawn up that this should come along by 1936. That is only eight years hence. We shall do well to get it by 1940. The point is, that a complete program is worked out, and that the actual rebuilding seems to be following along about as it should, according to the general plans. Map 12 shows the ultimate areas planned for the elementary schools. Compare this map with Map 1 and see how the overlapping has been practically eliminated.

Delaware is the only commonwealth in the Union where the state as a whole finances all the schools. About two thirds of our budget comes from the state department. In nearly all of the state outside Wilmington the complete school budgets are made up by the state department. It is true that Wilmington puts more into the state treasury then she gets out, but this is due to her wealth. Because the state pays the bills, or the major part of them, a Delaware child can go to any Delaware school without tuition, provided there is room. This fact, aside from the small territorial size of Wilmington, explains why we have so many nonresident pupils. Map 13 shows Wilmington and the upper part of Delaware where our nonresident pupils come from. All cities have quite a number of out-of-town pupils, and so a nonresident map is worth having.

During the past five years we have made many maps and diagrams to make clear different points in the rebuilding program. In this article we have only space for a few which are typical. Much of this work is no longer new, yet it is still not as commonly found in city school systems as it ought to be.

THE SAN FRANCISCO SCHOOL-BUILDING PROGRAM

(Concluded from Page 83)

The Everett Junior High School cost $982,000. The pupil capacity is 1,600. In October, 1928, there were 1,480 in attendance, five weeks after the opening of its doors. January, 1929, five months after its opening sees the building crowded to capacity. The per-pupil cost is $613.

This is the most complete building in the city. In addition to 13 classrooms, there are rooms or accommodations for a wide variety of instructional activities, as well as a cafeteria and a fully equipped auditorium.

The Mission High School cost $1,554,000. It was built for 2,000 pupils. It now has 2,300 enrolled. It can accommodate 2,200 easily. On the basis of 2,200, the cost per pupil is $706. This plant is complete in every way and provides accommodation for every branch of work.

Without question these buildings stand high when compared with the best schools constructed in American cities. They are built to care for the children of San Francisco in the years to come. They deserve recognition as the best equipped school plants that the painstaking care and loyal public support of a community can devise.

THE RESTRICTED SCHOOL-BUILDING PROGRAM

(Continued from Page 85)

and girls' toilet rooms; locker and shower rooms in connection with a gymnasium; and an auditorium to seat 600, for school and public uses.

The grade school was to be separate from the new high school, which made necessary the building of a new wall, and a second stairway; the installation of boys' and girls' toilet rooms; and incidental repairwork. Both old buildings were heated by a one-pipe gravity steam plant.

The building work was completed, as shown by the accompanying plans, including the grade school alterations, for the total cost of $76,134. This sum included plumbing, electric wiring and fixtures, slate blackboards, fireproof corridors and stairways, and a vacuum system of steam heat for both buildings, with a new boiler located in the grade school. The only change in the original plans and specifications was the substitution of a tile roof for asbestos shingles, at the direction of the board. All of the requirements were provided, and one extra classroom. The plans are so arranged that four more classrooms may be added at small expense. The sum of $4,604.12 was spent for furniture and equipment which, together with the furniture from the old school, was sufficient to obtain a first-class rating from the state superintendent.

(Concluded on Page 173)

Announcing

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A New Idea in Blackboards

"CINOPLATE" is a Valleyco Composition Blackboard with a foundation that is new and unique. This foundation is of pure wood torn apart and put together again under tremendous pressure without chemicals, the only binder being the wood's own juice. It is 100% pure wood without a grain.

"CINOPLATE" fills a long desired requirement in the Blackboard field. As it offers a board which is practically indestructible, damp-proof, and in fact carries with it every qualification found only in the more expensive boards and without the demerit of the more costly boards, which is weight. "CINOPLATE" Certificate Blackboard weighs one pound per square foot crated.

CINOBESTOS

"Cinobestos" Certificate Blackboards are the highest type of composition blackboards obtainable, because of the materials that go to make up the foundation of this board. "Cinobestos" is made of pure long asbestos fibers and Portland cement pressed into dense homogenious sheets. The process of manufacturing these sheets is regulated by a formula so that each and every sheet is identical, thereby offering a standard product at all times. Because of the Portland cement "Cinobestos" will grow harder as it grows older.

CINOBOARD

The foundation or backing of "Cinoboard" is of especially selected long wood fibers combined into a pulp and then laminated into a board that will lie flat and that will last indefinitely with proper care. Each panel is individually, scientifically kiln cured, water-proofed and further treated under our own special processes. "Cinoboard" has an especial appeal to the erecting contractor because of the ease it offers in handling and cutting.

Exceptional Writing Surface

The writing surface which is used for Valleyco Boards is of an exceptionally smooth, velvet nature. Its color is uniform black throughout. It will take any form of chalk with the exception of talc, readily making a clean, clear mark which can be easily erased. This surface is guaranteed not to crack, blister or peel.

All Valleyco Blackboards bear this Certificate

Genuine Valleyco Certificate Blackboards when properly installed are certified by the manufacturers not to warp, buckle or shrink; that the writing surface will not crack, chip or peel; that they will resist dampness and that they will not become discolored but will remain a uniform blue black throughout.

It is further certified that Genuine Valleyco Certificate Blackboards will provide a permanent writing surface, successfully accepting all crayons with the exception of talc, and that they will be easy to read from, and when properly treated, will not gloss.

In addition "CINOPLATE" is certified to be water-proof and can be attached to any wall regardless of atmospheric conditions.

Failure to meet any of the afore named qualifications will entitle the purchaser to replacement material, without charge.

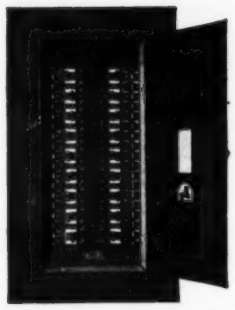
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A few good territories still available to responsible School Supply jobbing organizations. Write us for details.

The Valleyco Company, Inc.,

116-18 East Water Street, Cincinnati, Ohio.

Safety in Schools

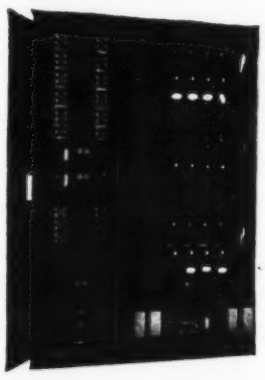


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Where tiny, trusting hands are apt to grope for a switch, there is a hazard — unless the switch is safeguarded. All (FA) Panelboards are dead-front panelboards. Their safety is equalled only by their service.

A catalog, describing every (FA) detail, will be mailed free.

Frank Adam
ELECTRIC COMPANY
ST. LOUIS



MAJOR FA SYSTEM

The (FA) Major System, for auditorium lighting control, is "dead-front" and a remote control—therefore absolutely SAFE for players and audience.

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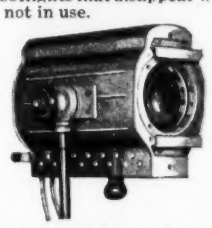
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(Concluded from Page 170)

THE ESTHER, MO., JUNIOR HIGH SCHOOL

Four years before erecting the Esther high-school building illustrated, we were employed by the board of education to build a new school. At that time the entire grade- and high-school enrollment was using one building, which was in need of some repairs. These repairs were attended to and the old building was turned into a grade school by making some necessary alterations. At the same time, a new combination grade and high school was erected, containing an auditorium-gymnasium.

When we met with the board to consider the present building, Superintendent D. H. Haldaman reported that the two existing buildings were in good condition but that they enrolled 738 pupils. Every room was overcrowded and about 80 students were seated in the gymnasium. After considering the probable future growth, it was agreed that a complete new high school would be necessary eventually, leaving the two other buildings for the grades.

Additional ground for this building, a study hall for those using the gymnasium, classrooms, and some equipment, were the present demands. The cost of the ground and equipment left less than $45,000 within the legal bonding limits to be expended on the first unit of the new school.

Superintendent Haldaman, in order to save expense at the time, organized the junior high school as a separate unit and moved it into the new building, with the household arts, shop work, and a garage for the school bus. When funds are available and another increase is demanded, this building will probably be converted into a senior high school and eventually enlarged to care for both junior and senior units. It is so arranged that many rooms can be added. An auditorium and a gymnasium are planned.

The first unit has for the present, and for the first time in years, given the district adequate space. Study-hall space and two classrooms in the new building will allow of some expansion for the immediate future.

The cost of the building shown, including heating, plumbing, a septic tank, electric wiring and fixtures, slate blackboards, etc., complete, was $43,150.59.

BONNE TERRE SCHOOL

The financial situation at Bonne Terre was excellent, as the board of education and Superintendent Fred Bruner had been anticipating the construction of a new building for several years, and had provided a building fund by means of a tax levy. The additional sum of $50,000 was provided through a bond issue which did not increase the tax levy.

The old high-school building had been erected in 1898 to accommodate about 100 pupils. There was no assembly room; the study hall, with only 84 seats, served all assembly purposes. Classrooms, lavatories, special departments, a cafeteria, a larger gymnasium, and an assembly hall were needed for the enrollment of about 200. To care for future expansion, it was planned to arrange space to accommodate about 300 pupils. The building was also to be designed so that three or more additional classrooms might be added at nominal cost.

The building as erected cares for the needs just outlined. The library room is adequate to care for 300. The assembly room will accommodate 855. The stage is large enough for a basketball court, and can be used to stage a large pageant if necessary. The cafeteria will seat 100 pupils at a time. The laboratories are all well arranged and well equipped. The chemistry laboratory has individual hoods on each table, including the instructor's desk. The cooking laboratory is organized on the unit-kitchen plan, with three gas stoves, two oil stoves, and one electric stove.

Included in the plans was the remodeling of the old high school for special departments. The old small gymnasium is now used by the grade pupils housed in the rear section of the high school. The latter is connected to the new school by a corridor. New windows were provided to insure proper light, partitions were rearranged, wiring and heating were remodeled and connecting with service in the new building.

The cost of the new construction and of the remodeling and repairwork, including plumbing, heating, ventilating of special departments, electric wiring and fixtures, with fireproof corridors and stairways, was $121,032.67.

The building has been equipped in a first-class manner throughout (except the cafeteria) for about $15,000.

In Conclusion

The results obtained have completely satisfied the needs of these districts, in so far as the funds allowed. It is certain that more was obtained for the money than would have been possible had haphazard methods been followed. The school board should go about a school-building program as the members would approach a problem in their own business, by getting the proper information in advance. A school architect can assist from the beginning and relieve the board of much loss of time and worry.

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BELLEVILLE ILLINOIS

INDEX OF SCHOOL-BOND PRICES

(Concluded from Page 90)

better bond prices are ahead in the near future.

It is an interesting thing to notice in Table III that the average rate on municipal bonds for 1927 was about the same as the current rate on school bonds. In 1927, interest rates were high the first of the year and lower at the end. The situations reversed in 1928, with low rates at the beginning of the year and high interest rates at the end. Table IV shows a slight drop in interest rates on Federal Government bonds from the high point of August.

As Table V shows so clearly, stock prices rose at a rapid rate during November; the rise was one of the largest on record. Loans on stock exchange collateral also rose to record heights and tended to take money away from the bond market. Although the final figures are not yet available for December, it seems as though the reduction in stock prices will lead to a reduction in brokers loans and after the first of the year may tend to lower-interest rates on bonds.

The prices of all commodities as shown by Table VI are off somewhat from the high point of September. The persistent rise in building-material prices does not seem to have exhausted itself as yet.

ISSUE PLANS AND SPECIFICATIONS FOR PRACTICAL SCHOOL THEATER

Auditoriums for schools and colleges quite frequently fail to meet the exact purposes for which they were erected due to inability to sense the real demands for a room of this character, or to failure to study the problem in complete detail before proceeding with the work.

In the opinion that a school auditorium must be a room which is entirely suited to the community and theatrical needs of the school, Mr. N. E. Reeid of Longmans, Green & Company has issued tentative plans and specifications for an auditorium which may be constructed by any local architect, with the aid of the dramatic director. The plans are the work of a group of five professional experts who are familiar with all the producing problems of amateur groups, with acoustical problems, and with the lighting problems in the best theaters.

In planning the theater, two important fundamentals have been kept in mind: the arrangement and acoustics of the auditorium to permit the audience to see and hear perfectly; the size and equipment of the stage to permit the performers to do their work with ease and intelligence. As arranged, the theater may be independent, or part of a larger building, and may be built on any scale.

The floor plan, utilizing a single floor level, shows the lobby, on the main floor, opening directly into the auditorium, with the dressing rooms and scenery rooms on the right and left of the stage, all surrounded by the hallways.

The stage has considerable depth for perspective, and width for large groupings. For smaller productions, it can be easily reduced in size by means of tormentors, act curtains, and scenery. A four-foot curtain may be used for assemblies in front of the curtain. Dressing rooms, costume closets, and make-up tables are at the right of the stage, while line controls, scenery rooms, and workbenches are at the left, thus separating the players from the stage hands and avoiding interference. A fire curtain must be suspended with iron cables, with emergency drop on both sides, so that both it and the curtain may be operated from the right stage. A trap at the left is provided with chutes for moving scenery and props to and from the basement. The switchboard holds at least twenty dimmers and is provided with flexible interlocking device controlled by master levers and interchangeable plugging. House and stage lights must be grouped separately on the switchboard, with the house lights arranged for either rehearsal or performance purposes. Water, steam, and electrical connections are provided on the stage for use in production.

In the design of the proscenium arch, it is necessary that the arch should be at least 24 ft. above the stage floor, to give dignity to the auditorium and to allow for scenic effects of great height. The roof must be 50 ft. from the stage floor to accommodate the fire curtain covering the arch, and the gridiron must be 45 ft. high, to accommodate a 22 ft. sky drop and to allow for a 5 ft. working space between the gridiron and the roof. The act curtain must be made to lift for scenic heights, to loop partially back for curtain calls, and to draw aside for masking wings when smaller sets are used. At least twenty extra pulleys and sets of lines, with three to four lines to the set, should be provided in addition to those shown, in order to accommodate productions with numerous drops.

The design has been submitted to one thousand of the large universities, high schools, and little theaters for their approval. In the light of their constructive criticisms, new designs will be prepared and distributed to schools and dramatic institutions of the country.

IMPORTANT SCHOOL-BOND SALES

During the Month of November, 1928

GEORGIA—Atlanta, School	$ 1,500,000
ILLINOIS—Aurora, School District	260,000
MARYLAND—Alleghany Co., School	250,000
MICHIGAN—Detroit, School	2,400,000
MICHIGAN—Grosse Pointe Twp., Agricultural School District No. 1	410,000
NEW JERSEY—Passaic, School	801,000
NEW JERSEY—West New York, School	299,000
NEW YORK—New York, Construction of Schools	21,000,000
NEW YORK—New York, School Construction	3,900,000
NEW YORK—Rochester, School Construction	250,000
NORTH CAROLINA—Forsyth Co., School	311,000
NORTH CAROLINA—Greensboro, School	500,000
PENNSYLVANIA—Monessen, School District	250,000
WISCONSIN—North Milwaukee, School District	275,000

SCHOOL BUILDING NOTES

—Meriden, Conn. As the first step toward meeting the need for additional school facilities, the board of education has made provision in its 1929 budget for thirteen new teachers for the school year 1928-29. The budget, as adopted, calls for appropriations totaling $592,801, as compared with the 1928 budget for $568,926, or an increase of $23,875 over the previous year.

Supt. C. C. Thompson, in commenting on the housing situation, declared that in the event that the new construction or additional classroom space is not available by next September, it will be necessary to secure the teachers included in the budget and to put certain classes on part time. At the present time, the board has not taken any steps toward providing new school construction other than to authorize a school-building survey.

—Knoxville, Tenn. The city council has appropriated $1,143,499 for the operation of the schools during the school year 1928-29.

NARRAGANSETT

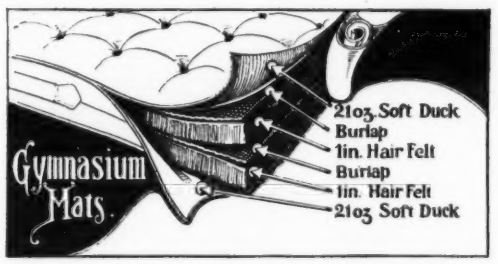
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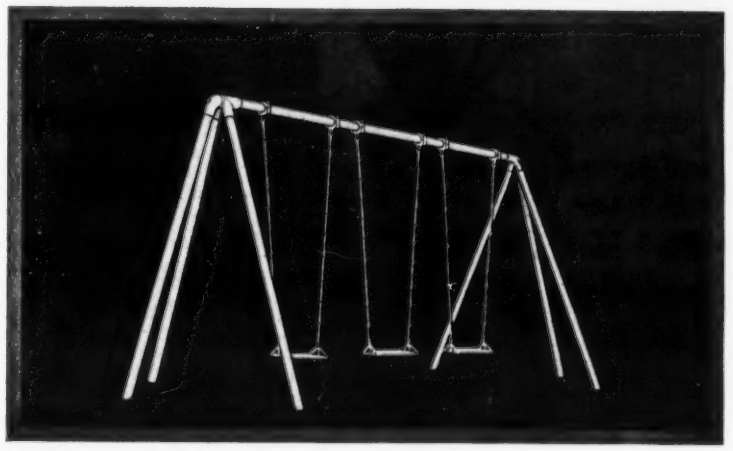
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Book News and Reviews

PIRATING MATERIAL FOR SCHOOL USE

Under the above caption, the Publishers' Weekly calls attention to an abuse which seems to be growing in the public schools, particularly in the high schools:

"The rights of authors seem to be nowhere more vaguely understood than in the schools and colleges. It is in this field that there has been a growing tendency to use, without permission or payment, a great deal of copyrighted material. The publishers of literary works or textbooks on academic subjects are constantly finding that classes in schools and in colleges are using multigraphed reprints of stories or chapters from books—made without the permission of the author or publisher without paying royalty and sold at a low price to the student. Teachers justify this to themselves by the argument that in the cause of education any literary matter ought to be available, although in most cases it is not the teachers who take the initiative, but those who are in the multigraphing business for profit and well know what they are doing.

"As these pirated books are not advertised or distributed in general channels, it is often many months before they come to the attention of the authors of the stolen works or the publishers, and the matter is a difficult one to run down. It is so obviously unfair to creative writing that it is surprising that this practice has grown up in educational institutions, which ought to be especially interested in encouraging literary production in this country, the more so because in the case of the textbooks from which chapters are lifted, the authors are themselves teachers. Those who recognize the importance of an ethical standard in this field ought to cooperate with the publishers and the authors of these works in arousing an opinion against the practice."

BOOK REVIEWS

School Building Management: The Operation and Care of School Plants

By Charles Everand Reeves and Harry Stanley Ganders. Cloth, 395 pages. Published by Teachers' College, Columbia University, New York City.

With the era of stately, well-constructed and well-arranged schoolhousing, there has also come into consideration the subject of school-building management. It is one thing to provide a utilitarian school structure, and quite another thing to so care for it as to secure the highest measure of service from the same. Safety, cleanliness, heating and lighting require constant attention.

In the preparation of this volume the authors have rendered a real service to the schools of America. They deal with their subject comprehensively and address themselves to the key-man in school-building management—the janitor-engineer. In doing so, they recognize the fact that the old-time janitor who swept the classrooms once a day and scrubbed them once a year is a thing of the past. With an appreciation of the educational operations carried on in a schoolhouse, and a recognition of influences which the physical surroundings bear upon these operations, the schoolhouse custodian has become an important factor.

Here it must also be recognized that the modern schoolhouse embodies many of the advanced utilities which science has evolved. The electrical equipment installed in the building, quite as much as the system of heating and ventilating, calls for the skill of an engineer rather than the service of an old-time janitor.

The authors proceed upon the thought that the janitor-engineer is a school official as well as an employee. "Involved in the janitor's responsibility" they say. "is the health and safety of the children of the school." The sanitary condition of the classrooms, toilet rooms, and grounds; the maintenance of even temperatures at the best degrees in classrooms, gymnasiums, and dressing rooms; the supply of pure, tempered, and humified air—all bear a definite relationship to the health of school children."

Again, school-building management bears an influence to the discipline and ideals of the school. The authors contend that: "The janitor's personal influence upon children in the elementary school is scarcely less than that of the teacher. He is often the only 'schoolman' with whom elementary pupils have contact. He is given authority over children during free periods; they are then most active, spontaneous, and natural, and it is then that lasting habits are formed. This calls for an acceptable personal appearance, high standards of conduct and morality, intelligence, and high-mindedness on the part of the janitor.

"Clean classrooms, clean toilets, well-cared-for tools and equipment, and well-lighted corridors have only to be contrasted with dirty classrooms, dirty and foul-smelling toilets, dirty mop pails, tools left in rooms and corridors, dark and poorly ventilated corridors and stairs to reveal forcibly the influence of the work of school-building management upon school morals, school morale, and school discipline."

The volume is divided into 5 parts and 21 chapters. The first part deals with the recruiting of the janitor service, civil service regulations, qualifications that ought to be exacted. The subject of training for the service is dealt with. Summer schools for engineers are described. The salary problem, hours of labor, etc., are amply covered. General rules applied in fixing the qualifications to be exacted in the selection of the janitor are provided. Service costs are thoroughly analyzed.

The management of the janitorial-engineering service comes in for adequate attention. A plan of organization which embodies the best experience on the subject is provided. The function of the superintendent of buildings and grounds, a position which obtains in many cities.

There are chapters which enumerate the facilities, or physical conditions, which must be provided in order to insure an efficient service. They deal with building conditions, furnace rooms, and radiators, types of seating and ventilators. The tools and supplies, and general working paraphernalia.

The ten chapters of Part II go with a striking thoroughness into the subject of cleaning. The relative merits of brooms, brushes, and vacuum cleaners come into play. The results of experiments made with vacuum cleaners and floor brushes are presented. The installation of a central vacuum-cleaner system, manner and cost of operation are clearly presented.

The authors go exhaustively into the subject of sweeping, dusting, scrubbing, and mopping. They say: "The cleaning of floors is, in many respects, the most important of the school janitor's job. It usually requires more time than any other single job; it must be performed both frequently and regularly; its results are conspicuous and its degree of effectiveness is easily observed; it is one of the principal jobs involved in school-building sanitation. Historically, the cleaning of floors, together with the maintenance of warmth, was the origin of school janitorial service. Hundreds of other jobs have been added to the janitor's work, but the cleaning of floors still maintains primary importance.

"The preservation of floors, woodwork, and furniture is important. The oiling and waxing of floors, the cleaning and treatment of woodwork, fixtures, furniture, walls, and ceilings, not only involves constant care, but a knowledge of the materials employed. Equal consideration is given to the subject of dusting, and to the care of toilet rooms.

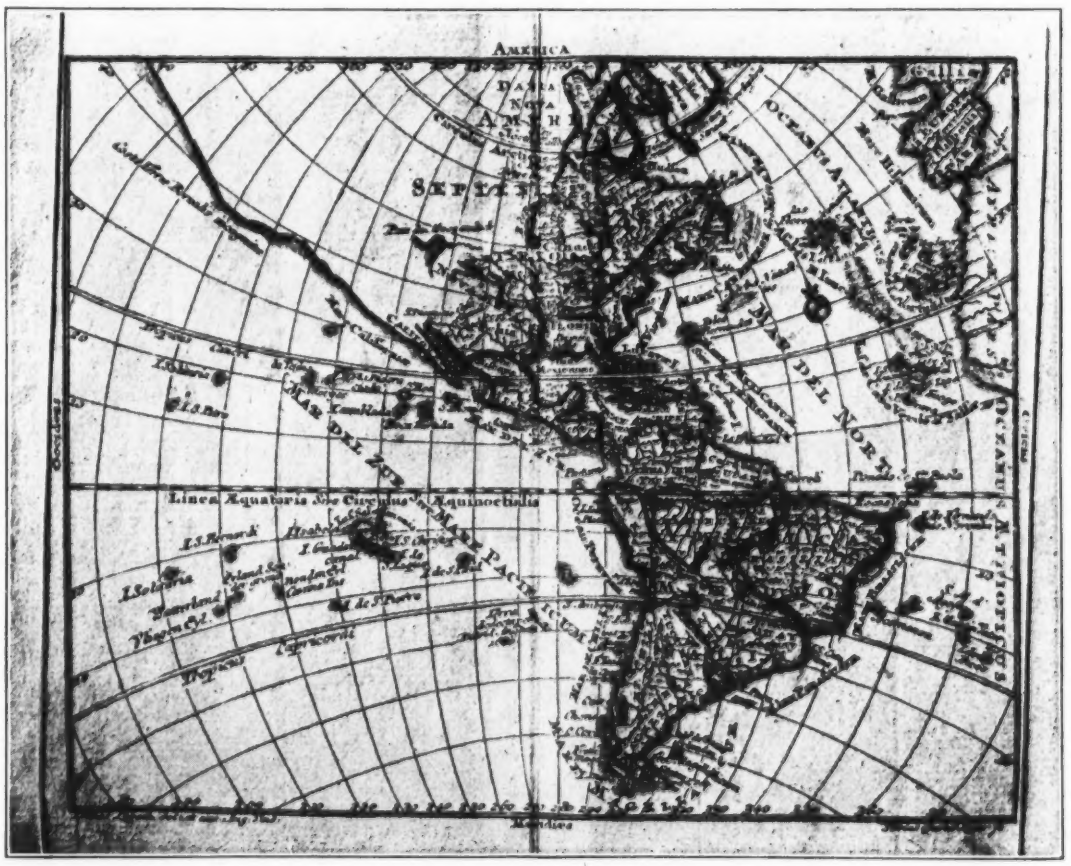
"Nothing will condemn so quickly the janitorial service of a building," say the authors, "as dirty toilet rooms, and toilet odors penetrating into corridors and rooms. The condition of toilet rooms is forced upon the attention of all who use or visit a school building. While toilet cleaning is a minor job, so far as time required of janitors is concerned, it is a major job in importance and one of the principal criteria for judging the effectiveness of the janitorial service of a school building. Compared with the amount of labor involved, no other work will bring so great returns in the good opinions which others will have of the janitorial service of school buildings as will the janitor's efforts to keep toilet rooms clean and sanitary."

In modern school architecture the element of safety is a first consideration. A structure must be safe before it is permitted to become ornate. The authors deal with the matter of safety from the standpoint of the janitor-engineer. They make it clear that (1) he is a factor in protecting the lives of children and the school property from fire, that (2) he be called upon to respond in cases of first aid, (3) that much of the sanitation work of the building is within his keeping.

In pointing out the duty of the janitor-engineer to protecting the lives of children and at the same time valuable public property the text says:

"The significance of this phase of the work of the janitor-engineer will be appreciated when one realizes that approximately one fifth of the population of the United States are compelled by law to attend school, and while in school are dependent largely upon the janitor-engineer for their safety from fire. It will be further appreciated when one considers the fact that school buildings, comprising millions of dollars worth of public property, must be operated for an important use, but that many of these buildings are, according to authorities, veritable fire traps. Many cities have never had a serious school fire. Many others have had

(Continued on Page 179)



A BOSTON SCHOOL GEOGRAPHY OF 1673

This photograph from an old book at the Boston Public library is taken from a schoolbook of the year 1673 used in Boston, and shows how much simpler it was to study geography in those days of blockhouses, Indians, and witchcraft. Very little was known about places which are now cities of teeming millions of people. The book was printed by Tobias Lotter. (Wide World Photo.)



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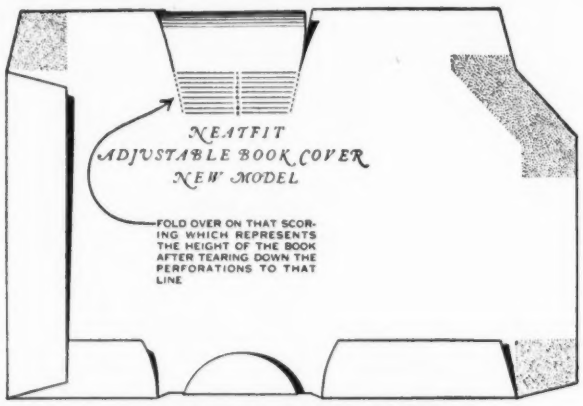
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3. **Home life is the central thought of the early pages of the Primer.**
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(Continued from Page 176)

heavy loss of life and school property from fire. Few cities have a record of having had no loss of life or school property from fire.

The losses through schoolhouse fires have exceeded the eight-million-dollar figure annually for a number of years. The remedy must not only be sought through fireproof construction and the installation of heating systems that are reasonably safe, but more largely through adequate care on the part of the building custodians. The latter must not only know the particular hazards that are prevalent at all times, but the preventive measures which he must observe. On this point the authors hold that:

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A chapter is devoted to records and reports such as are to be kept by the janitor-engineer or by supervisory officials. A list of janitor's supplies is also provided, also a statement of items of repair-work and the condition of things with which the custodian comes into contact. The final chapters are devoted to the care of school grounds and the kinds of repair coming within the province of the janitor-engineer.

The bibliography at the end of the volume refers to some thirty articles which appeared in the AMERICAN SCHOOL BOARD JOURNAL on the subject in recent years. This includes nine articles on "The Work of the School Janitor" written by Charles Everend Reeves.

The present volume must be considered the most complete and serviceable work on the subject now on the market. It will not only serve as a handbook for those in charge of school buildings, but also prove a valuable guide to administrators who are concerned in securing an efficient janitorial service.

A book dealing with the janitorial service must necessarily discriminate between the large and the small community, the single janitor, the janitor with assistants, the janitor-engineer, and finally an elaborate system of service under a school-building manager. These several gradations of the service are duly recognized.

Education: Principles and Practices

By Emit D. Grizzell. Cloth, 404 pages. The Macmillan Co., New York City.

This volume, designed to serve as an introductory course in education, admirably fulfills its purpose. The method of approach is historical and comparative; its aim is to place American education in its full setting of origins and tendencies. Rightly Dr. Grizzell insists that the student of American education must "look to other lands, and other times, for the inspiration and patterns of its educational principles and practices." And, it may be remarked, that the author is well-fitted for his task, because of his knowledge of the origins and development of American secondary education, so admirably set forth in his earlier volume, *Origin and Development of the High School in New England before 1865*. As a mere *obiter dictum*, this reviewer wonders if this book and its method of approach, characteristic of several of the newer books in education, signals the recrudescence of interest in the history of education which for a decade has been the Cinderella in the pedagogical family.

In orderly fashion, Dr. Grizzell recounts the story of our educational heritage, shows how the American scene modified European pedagogical traditions, and then devotes several chapters to the American philosophy of education. He does not, of course, neglect to acquaint the student with the findings of educational psychology. The mental make-up of the child, his individual differences, ---physical, mental, emotional, and social—receive adequate treatment for the end proposed. The important thing is that he introduces the beginning student to education in its larger aspect, tying up aims and purposes of education with the newer science. This will create the right attitude in the beginner. Psychology merely indicates the present status; American education needs to know not only what it is doing, and where it is going; it needs also to know whether it is going in the right direction. One might wish that Dr. Grizzell had stressed even more strongly the aims and purposes of education.

The other topics usual in an introductory course receive adequate treatment. Administration and finance, training of teachers, and the reorganization of the curriculum are presented in satisfactory fashion. Statistical tables, graphs, and figures do their share in giving the student a complete picture of the present trends in American education. It is a book well worth reading by teachers in service who will find here in summary fashion, much material that they would have to search for in many periodicals. Most of all, it will serve as an excellent manual for courses in the introduction to education. The book is a model of its kind, a concise, well-balanced abridgment of the philosophy and science of education.

The High School

By Walter S. Monroe and Oscar F. Weber. Cloth, 500 pages. Price, $2.50. Doubleday, Doran & Co., Garden City, N. J.

This volume is one unit of a coordinated series of texts in the field of education, prepared under the general editorship of Dr. Monroe of the University of Illinois. It is intended to serve as a textbook for the course in principles of secondary education. A conscious attempt has been made here to avoid overlapping with the content of courses in methods and educational psychology. The present volume tries to supply the prospective high-school teacher with a fairly comprehensive knowledge of secondary education in general, and with an overview of the aims and objectives of the high-school curriculum. Accordingly, there are chapters devoted to the historical development of the high school in the United States, a comparison with secondary education in England, France, and Germany, an explanation of the modern trend to include in secondary education the junior high school and junior college. These topics are presented admirably, particularly the comparative study of modern European education.

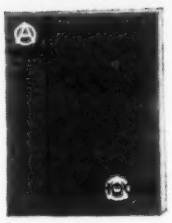
The next three chapters are devoted to the aims of the high school, the curriculum, and its construction. The division of the aims into conduct objectives and control objectives seems a bit of unnecessary jargon; surely educational literature has more than sufficient of that now. In the interest of simplicity, they might well be called by their old names, ultimate objectives and immediate objectives. The prevailing point of view with regard to aims, as well as present procedure, in curriculum

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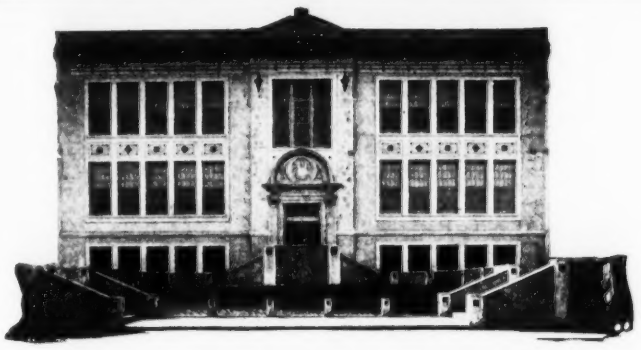


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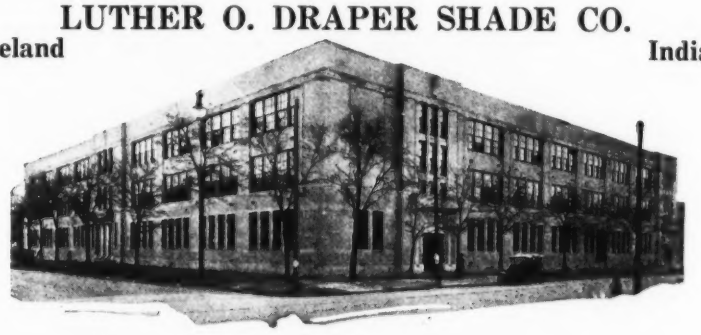
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construction is treated at length. A rather notable omission is the failure of the authors to stress character training. Ethical character to them "does not appear to designate a separate group of activities but rather applies to controls of conduct that are required for the realization of the objectives already named" (i.e., the first six of the cardinal principles of secondary education).

Book of Business Standards

By J. Geo. Frederick. Cloth, 256 pages. Price, $2. Commercial Standards Council, New York.

A collection of business "codes of ethics." It suggests that progress is being made, but gives evidence that most business organizations still argue for honesty merely because it pays.

An Appreciation and History of Music

By Agnes Hollister Winslow. Paper cover, 118 pages. Published by the Educational Department of the Victor Talking Machine Company, Camden, N. J.

The publication is designated as a synoptical lecture-laboratory course for university, college, and secondary-school use. It seeks to bring a more intelligent understanding to the subject of music. The fundamentals, such as rhythm, melody, and harmony are dealt with by presenting typical examples.

The classification of voices, the orchestra by sight and sound, theme recognition, literature of song, instrumental song forms, rise and development of the characteristic national idioms, etc., etc.—all are adequately dealt with in Part I. Phonograph records, through which the argument is demonstrated, are enumerated in title and number.

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Instructional Tests in Arithmetic

By Raleigh Schorling, John R. Clark, and Mary A. Potter. Four booklets and teacher's manual. Paper, 64 to 96 pages. Published by World Book Co., Yonkers, New York.

These books present a series of standardized "inventory" tests, supplemented by groups of "practice" tests, all intended to determine the effectiveness of class instruction and to provide intensive drill. Each inventory test is built up around some typical unit of instructon. If the student passes the test, he need waste no time on the drill material. If he fails, he may be required to work on as many of the practice tests in the group as may be necessary. The work thus is adapted to the varying abilities of children, and the teacher may readily determine what individual attention each child requires. The books exemplify in a practical way, the latest researches in the psychology of drill work, in the making of tests, and in the elimination of difficulties and common errors.

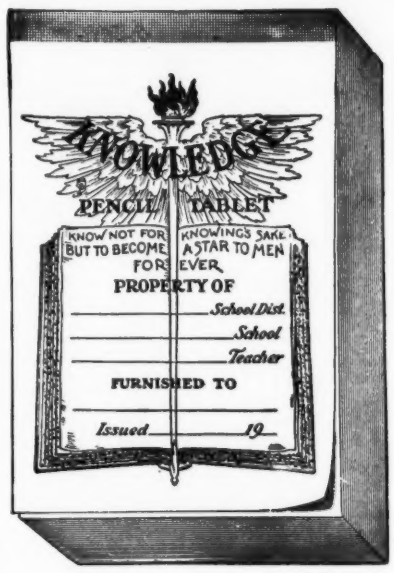
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By Elmer H. Staffelbach and George E. Freeland. Seventy-nine sheets fastened in pad form. Published by the American Book Company, New York City.

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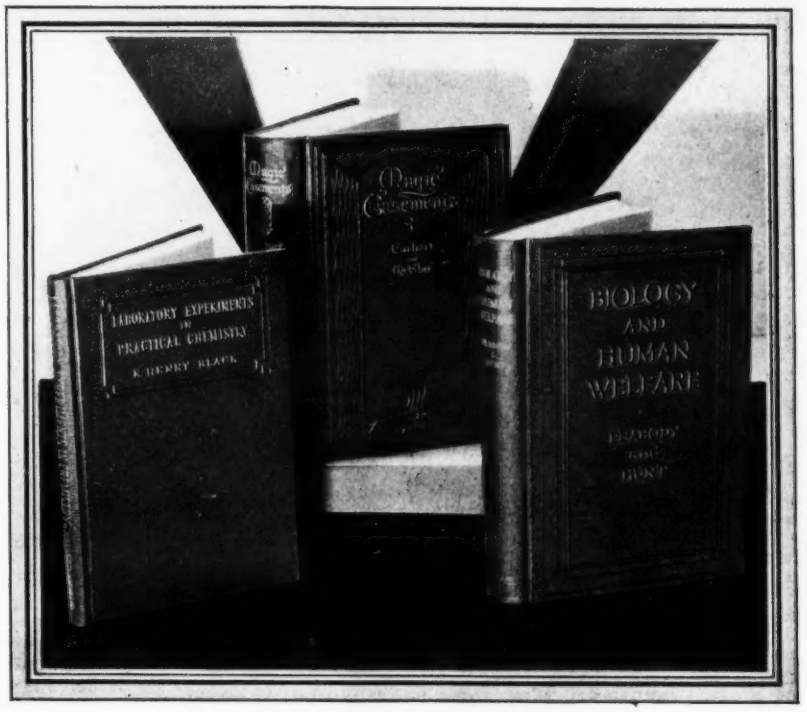
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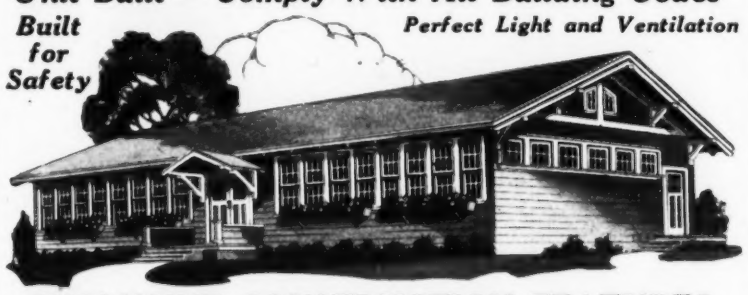
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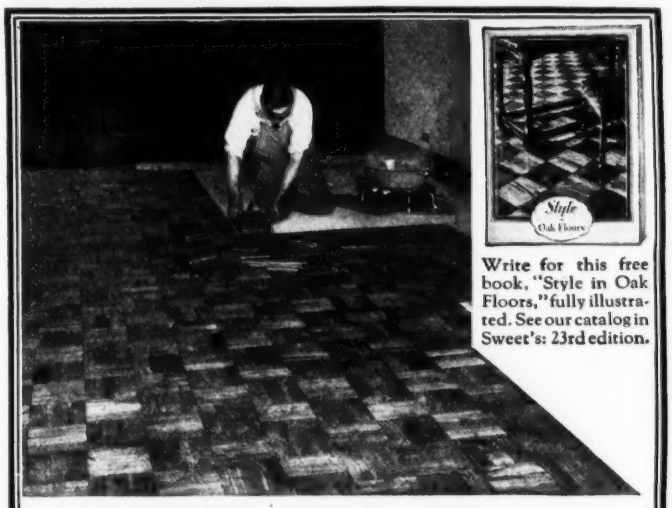
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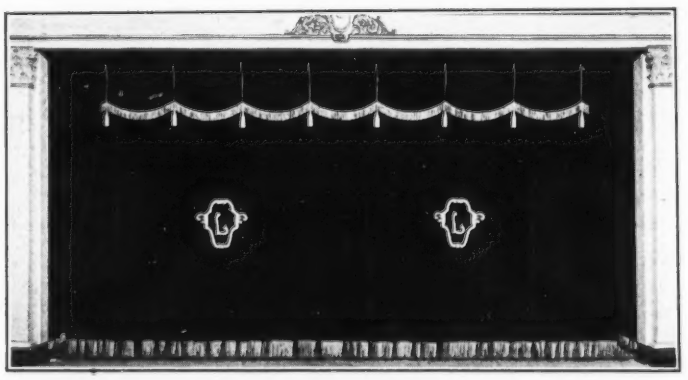
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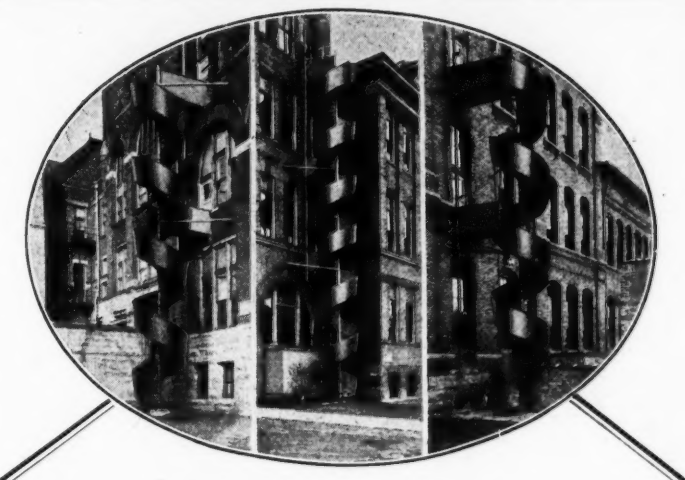
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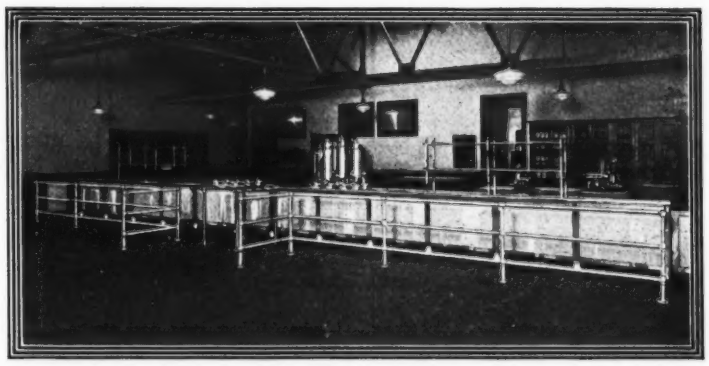
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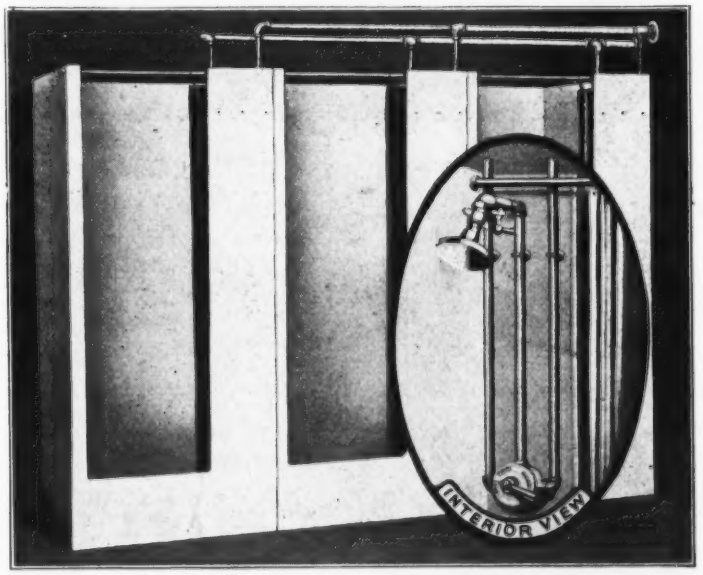
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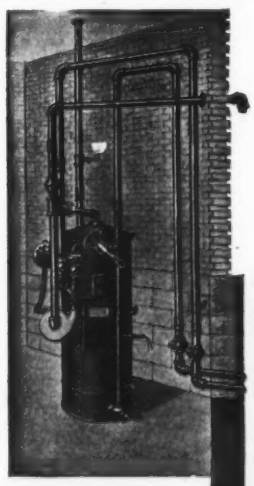


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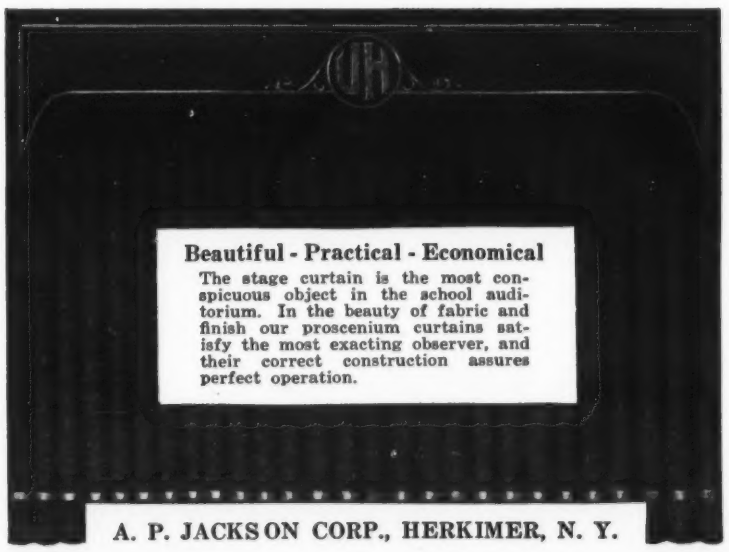
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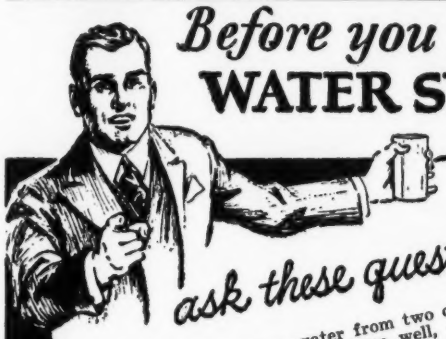
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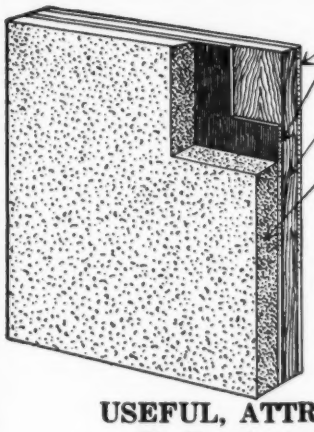
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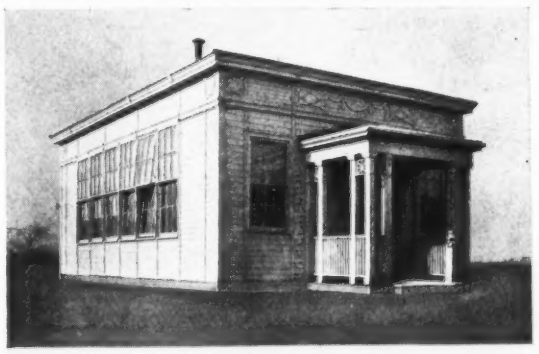
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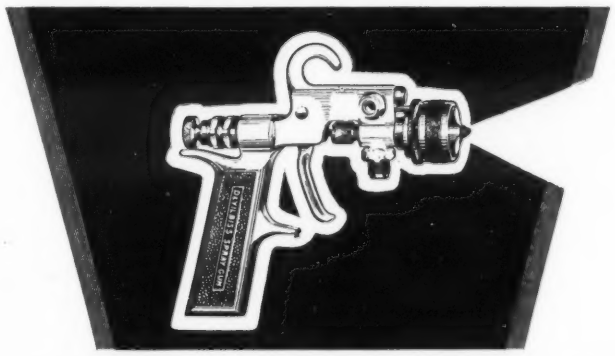
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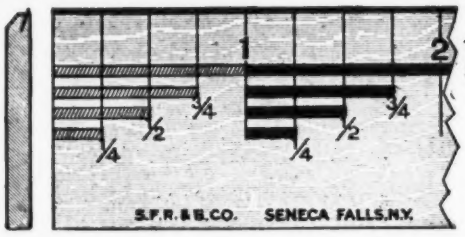
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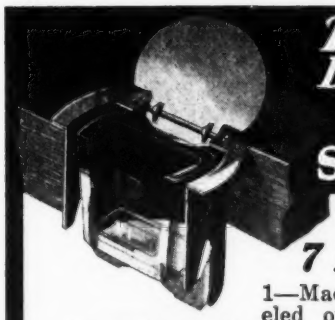
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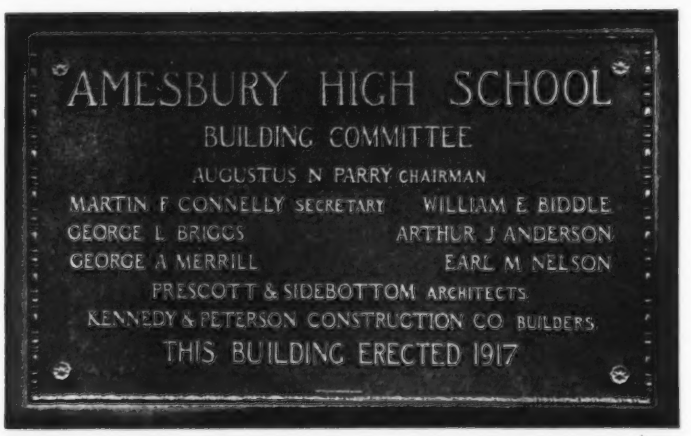
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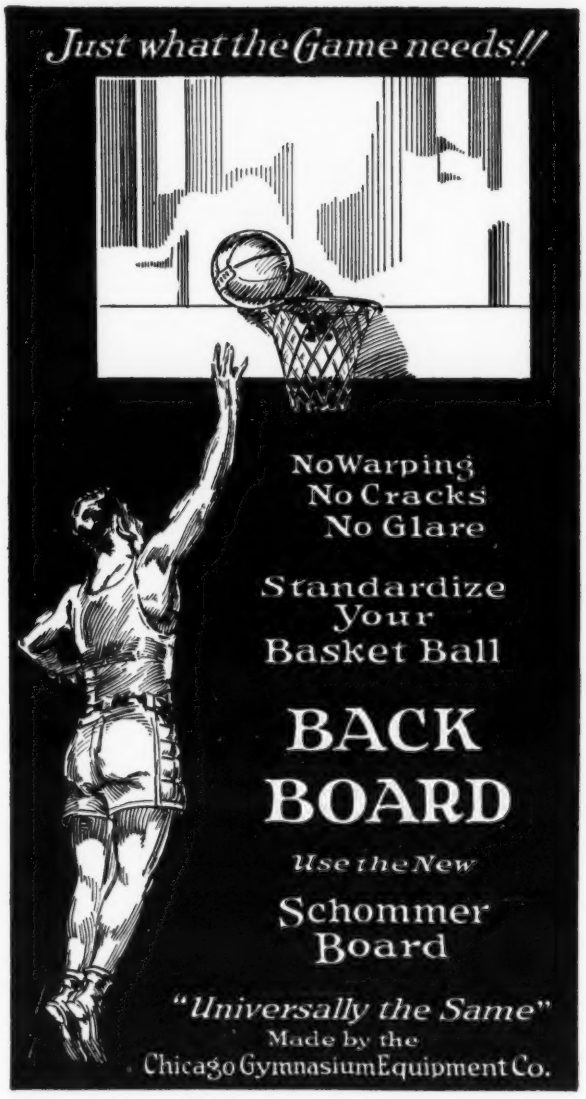


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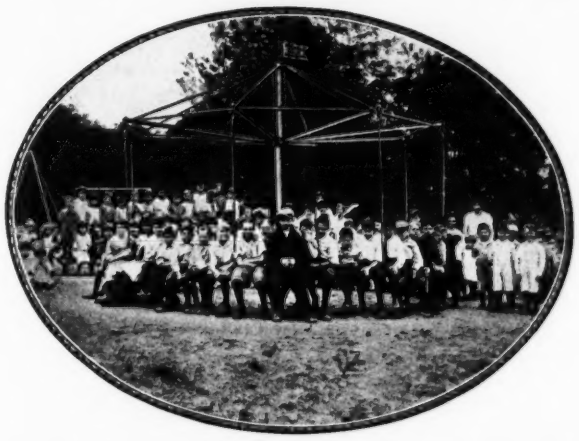
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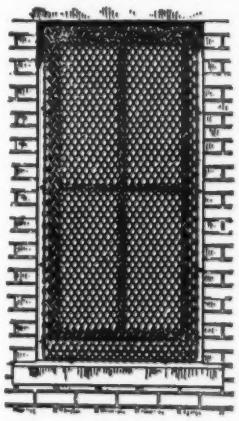
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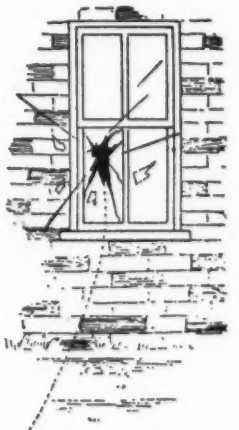
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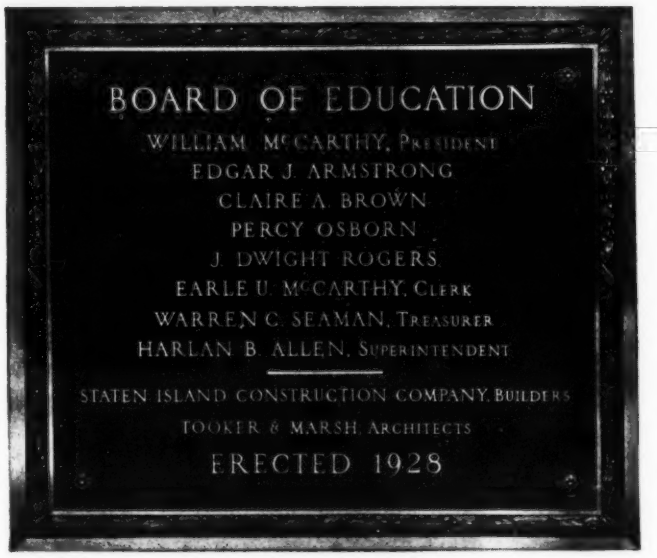
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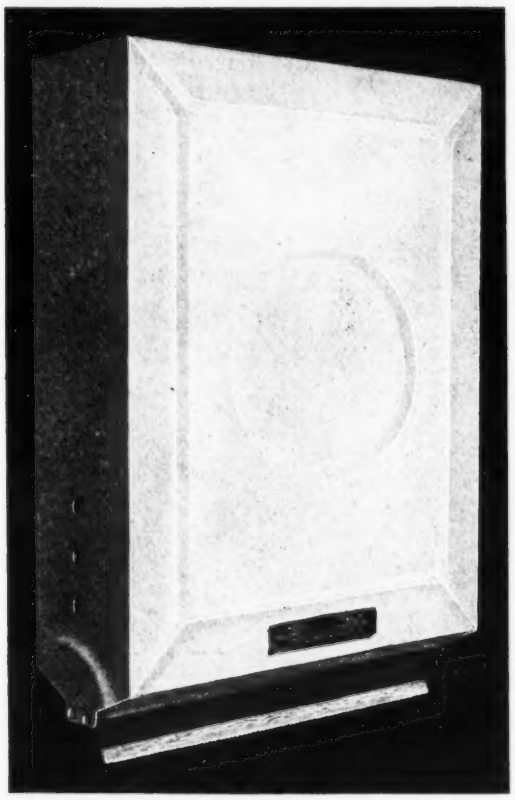
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The names given below are those of the leading and most reliable Manufacturers, Publishers and Dealers in the United States. None other can receive a place in this Directory. Everything required in or about a schoolhouse may be secured promptly and at the lowest market price by ordering from these Firms.

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PENCILS
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Potter Manufacturing Corp.
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SANDERS
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Detroit Steel Products Company
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SASH, VENTILATING
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Nelson Corp., The Herman
Peerless Unit Vent. Co., Inc.
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National Crayon Company	32
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Nelson Mfg. Co., N. O.	120
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BUYERS NEWS

MODERN WASHROOM REQUIREMENTS FOR SCHOOLS

The Bradley Washfountain Company, Milwaukee, Wis., has recently issued a new catalog No. 1028, entitled "Modern Washroom Requirements," which illustrates and describes the complete and improved line of Bradley washfountains for group washing in schools.

The catalog contains numerous illustrations of typical installations in schools, also diagrams and suggested layouts for the use of school officials and architects, who must provide adequate washroom facilities in school buildings.

Complete information and prices of these washfountains may be obtained by writing to the Bradley Washfountain Co., at 2203 Michigan St., Milwaukee, Wis.

RODDIS CUSTOM-BUILT DOOR

The Roddis Lumber & Veneer Company of Marshfield, Wis., has issued a four-page data sheet covering the specification for the Roddis custom-built door. The sheet is intended to be of help to architects and school authorities in solving the problem of combining individual design with standard production and permanence.

Complete information may be obtained by writing to the Roddis Lumber and Veneer Company at Marshfield, Wis.

OAKITE PRODUCTS COMPANY HOLDS ANNUAL CONFERENCE

The Oakite Products Company of New York City, at its annual sales conference on November 14 to 17 at the general offices of the firm, announced the completion of twenty years of service in the field of industrial cleaning work. The conference was intended for the technical staff, the field-service men, and the executives of the firm and was attended by district managers and representatives of 33 states and Canada, who discussed subjects ranging from the cleaning of watch crystals to ocean liners and silk stockings.

At the conference, there were nineteen papers on technical, sales, and service topics. Addresses were given by Mr. Frank Bruce, publisher of the School Board Journal; Mr. Frank O. Dunning, eastern manager of The Bruce Publishing Company; Mr. W. E. Irish, associate editor of The American Machinist; Mr. P. W. Swain, managing editor of Power; and Mr. W. Drew, eastern manager of Bus Transportation.

NEW ANGLE STEEL STOOL CATALOG

The Angle Steel Stool Company of Plainwell, Mich., has just issued a 112-page catalog of steel furniture, which should be of particular interest to all buyers of school equipment.

The catalog describes and illustrates the special steel-built products of the firm, comprising stools for the laboratory and drafting room, tablet-arm chairs for the auditorium and lecture room, straight chairs for general use, teachers' posture chairs, lockers, wardrobe or storage cabinets.

A copy of Catalog C will be sent to any school official who will send a request to the Angle Steel Stool Company at Plainwell, Mich.

NEW CATALOG OF MITCHELL PLAYGROUND APPARATUS

The Mitchell Mfg. Company of Milwaukee, Wis., has issued its new catalog No. 15 of "betterbuilt" playground apparatus. The catalog contains 32 pages devoted to such equipment as merry-whirls, swing bobs, swing-a-rounds, swings, flying rings, chair swings, gymnasium combinations, special combinations, slides, teeter-totters, horizontal ladders, turning bars, giant strides, tree climbs, natatorium slides, and kiddie whirls, as well as a variety of equipment for basketball, playground, and other outdoor use.

Complete information and prices may be obtained by any school official who will write the Mitchell Mfg. Company at 1801 Forest Home Ave., Milwaukee, Wis.

A BOOKLET ON ULTRA-VIOLET RAY WATER STERILIZATION

Under the title of "An Idea Stolen From Sunlight," the James B. Clow Company of Chicago, Ill., has issued a brochure containing a description and illustrative data on ultra-violet ray water sterilization with R.U.V. sterilizers.

The booklet stresses particularly the application of ultra-violet rays to commercial processes, as well as its therapeutic application from the scientific and engineering viewpoints. Its advantages as a means of water sterilization are that it prevents disagreeable tastes and odors, that it removes the chemicals and positively sterilizes the water, that it reduces the operating costs of providing pure water, that it simplifies the operation of the system, that it avoids the danger of overtreatment and the storing of poisonous chemicals, that it insures positive, continuous delivery of pure sterilized water, and that it provides a simple, foolproof, and long-wearing sterilizer with an average lamp life of two years.

Complete information and prices may be obtained by writing to the James B. Clow Company at 201 North Talman Ave., Chicago, Ill.

NEW CATALOG OF LYON STEEL FOLDING TABLES AND CHAIRS

The Lyon Metal Products Co., of Aurora, Ill., has issued a beautifully illustrated pamphlet showing colored designs for the Steelart steel folding tables and chairs. The pamphlet illustrates two types of folding tables in a variety of colored designs, and points out in a most convincing way, the highest standards of quality as represented in the design and construction. The steel frame and legs of the tables are of tubular steel construction, correct mechanical design, and accurate workmanship, and are capable of supporting well over 1,000 pounds.

Complete information and prices of these tables and chairs may be obtained by writing to the Lyon Metal Products Co., at Aurora, Ill.

NEW IMPROVED DURABILT STEEL LOCKER

The Durabilt Steel Locker Company of Aurora, Ill., has announced the marketing of its new improved steel locker for school use.

The new locker has many new and exclusive features, including rigid steel-door frame, scientifically reinforced door, five-knuckle, full-looped, strap hinge with reinforcing plate, patented tamper-proof automatic locking device, automatic locking-bar release, straight lift handle, and locks. This new locker is fully up to the standards of previous designs and combines in one product those features of neatness, sturdiness, and moderate cost which should make it at once popular in the school field.

Complete information and prices of the new Durabilt improved steel locker may be obtained by writing to the Durabilt Steel Locker Company at 600 Arnold Ave., Aurora, Ill.

THE BUCKEYE BLOWER COMPANY EXPANDS

The Buckeye Blower Company, of Columbus, Ohio, manufacturers of the Buckeye Heatovent system of heating for schools, has purchased a building and three acres of land at 374-412 Dublin Ave., Columbus, Ohio, which it will occupy on January 1. The newly acquired building is 90 ft. by 310 ft. in size, four stories high, and provides a manufacturing space of 110,000 square feet. It is planned to erect a large addition to the north, which will provide increased floor space amounting to 150,000 square feet.

The present building and grounds have been obtained as a means of keeping abreast with the rapidly increasing demand for Buckeye heatovents, and the new expansion program will make possible better service to the customers of the Buckeye Blower Company because of the added facilities for manufacturing and shipping.

The Buckeye Blower Company has vastly expanded its output of heating and ventilating units for schools. In 1921, when the company was first organized, the total annual sales were approximately $50,000. Its growth during the past seven years has been steady and rapid, and the company is now doing a business of approximately two million dollars annually. Thirty branch sales and service offices are maintained in the principal cities. The principal product is the Buckeye heatovent, a ventilating unit used in school buildings throughout the United States and Canada. Eight hundred of these units have been installed in the schools of New York City alone, and recently an order for 300 additional heatovents was received.

Associated with Mr. Guy C. Bowman, president of the firm, are Mr. Wm. I. Lawson, vice-president and general manager; Mr. W. L. Thompson, secretary-treasurer; Mr. A. T. Holl, sales manager, and Mr. L. D. Harnett, chief engineer.

NEW WESTERN REPRESENTATIVE OF THE MITCHELL COMPANY

The Mitchell Manufacturing Company of Milwaukee, Wis., has announced the appointment of Mr. C. M. Janes of Tacoma, as the representative of the firm in the states of Washington and Oregon. Mr. Janes will represent the Mitchell "betterbilt" line of playground equipment.

DAYLIGHTING SCHOOLS WITH WILSON BLINDS

Under the title of "Daylighting School," the J. G. Wilson Company of New York City, has issued a circular prepared by Mr. Woodruff Sutton, describing its new Diffuselite blinds for use on schoolroom windows. The Diffuselite blinds are of two standard types, both of which are of the highest quality of finish and material.

Type No. 11 is equipped with a steel traverse roller at the head, which travels back and forth to compensate for the lift of the suspended slats. Suspension cords attached to the roller, carry the weight of the blinds, while the operating cords are first-quality solid braided cords.

Type No. 12 is manufactured without the grooves and slider, but is well designed for appearance and utility.

Diffuselite blinds are hung on Wilson patented brackets of solid bronze and are finished in either white or Diffuselite green.

Complete information and prices may be obtained by writing to the J. G. Wilson Corporation, 11 East 38th St., New York City.

THE STRUCO SLATE REVIEW

The Structural Slate Company of Pen Argyl, Pa., has begun the publication of a new periodical called "The Struco Slate Review," which is devoted to supplying authoritative information regarding the diversified uses of slate, its production and distribution. The paper is intended to be of service to architects, engineers, building contractors, and others, who seek to render genuine service in the field of architectural construction.

The paper is edited by Mr. R. Robbins and is issued from the executive offices of the Structural Slate Company at Pen Argyl, Pa.

NEW YORK OFFICE OF MILLER COMPANY MOVED

The New York office and showroom of the Miller Company of Meriden, Conn., was moved on January 1 to its new location, at 24 West 40th Street, between Fifth and Sixth Avenues.

The new location comprises two entire floors and is readily accessible to all railroad stations and hotels. It houses a complete display of the Miller lighting fixtures, portable lamps, and lighting specialties, commercial and residential lighting equipment. The Monowatt Corporaton of New York City, a subsidiary of the Miller Company, will also have offices in the same building.



THE NEW PLANT OF THE BUCKEYE BLOWER COMPANY, COLUMBUS, OHIO

Burroughs

Electric CALCULATOR

$300
DELIVERED
U.S.A.



There is no faster machine for handling calculations in administrative work; no better machine for teaching calculation to the operators of the future.

BURROUGHS ADDING MACHINE COMPANY, DETROIT, MICHIGAN

A TREATISE ON SCHOOL AND FACTORY WINDOWS

The Detroit Steel Products Company of Detroit, Mich., has just issued a book prepared by its engineering research department, telling how the lighting and ventilating requirements of a proposed building may be analyzed in advance of its construction.

The book is the result of five years of experimental work conducted by the firm's research department and the University of Michigan, which has revealed new principles of daylighting and airation, many of which have never previously been used by any body of experts. The findings which have eliminated all guesswork methods have resulted in the development of certain principles and methods by which the requirements for correct fenestration and airation (natural lighting) may be predetermined.

A description of these findings is reproduced in the new treatise, entitled "The Fenestraway of Daylighting and Airation," which takes up the topics of adequate illumination, the control of daylight, window area and window heights, vertical and sloping windows, and coordinating and temperature differences. In the preparation of the book no attempt have been made to answer all problems, but the purpose has been to show what may be accomplished by a scientific consideration of the important principles before a building is erected.

Copies of the treatise may be obtained without charge, by writing to the Detroit Steel Products Company, 2250 East Grand Boulevard, Detroit, Mich.

A CORRECTION

The Defer School at Grosse Pointe, Mich., published in the December number of the JOURNAL, in the advertisement of the Indiana Limestone Company, is the work of Mr. Geo. J. Haas, architect, Detroit, Mich. The building is notable not only for economical and efficient planning and construction, but also for its very dignified graceful exterior design. All exterior trim is Indiana limestone.

NEW CATALOG OF EVANS VANISHING-DOOR WARDROBE

The W. L. Evans Company of Washington, Ind., has issued its new Catalog K and price list, illustrating and describing the Evans vanishing-door school wardrobes. The catalog illustrates and describes the Class-C door wardrobe, equipped with or without exhibit blackboards and vertical air currents for drying clothes; the Class-D door wardrobes, made with plaster back and ends and ventilating screen; the Class-H door wardrobe, with wardrobes against the wall and a top for hats and caps; The Class W, with the plaster backs and ends, and doors vanishing within the compartment; and the Class X, equipped with a teacher's bookcase and closet; also, the Class-T type of teachers' closet for use where the space is restricted.

The catalog offers specifications for typical installations of school wardrobes for the use of architects and school authorities who are confronted with the problem of erecting a new school. A copy of the catalog may be obtained by writing to the W. L. Evans Company at Washington, Ind.

PUBLICATIONS RECEIVED

Paint and Varnish Brushes. Simplified practice recommendation R43-28, 1928. Price, 5 cents. Prepared by the bureau of standards of the U. S. Department of Commerce, and issued through the Government Printing Office at Washington.

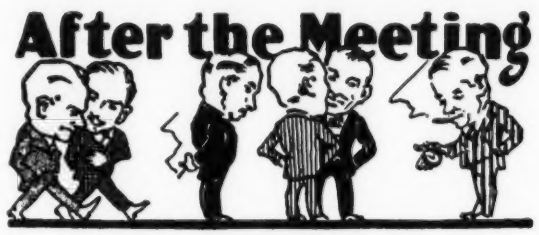
Folding and Portable Wooden Chairs. Simplified practice recommendation R80-28, 1928. Prepared by the bureau of standards of the U. S. Department of Commerce, and issued through the Government Printing Office, Washington. Contains standard specifications for single folding chairs, and for portable assembly chairs.

United States Government Master Specification for Powder, Scouring, for Floors. Federal specification No. 34a, contained in Circular No. 370 of the Bureau of Standards for August, 1928. Prepared by the bureau of standards of the U. S. Department of Commerce, and issued by the Government Printing Office at Washington. The specification contains the general specifications for scouring powders, including material and workmanship, and also the methods of sampling, tests, and basis for purchasing.

NEW COMPANY MANUFACTURES BEACON FOLDING CHAIRS

Mr. William H. Wark, who has been associated with the Beacon Steel Furniture Company, and Mr. B. W. Willard, for many years connected with the Albert Pick-Barth Companies, have taken over the manufacture and sale of the Beacon steel chairs.

The new firm will be known as The Wark-Beacon Steel Furniture Company, with its sales offices located at 1440 South Wabash Ave., Chicago, Ill.



Pleasant Misunderstanding

W. B. Bliss, assistant state director of education for Ohio, finds that one of the important phases of his relationship with school people throughout the state has to do with gaining an understanding of local points of view. Only rarely does he find any saving grace in obtuseness in this respect. By way of demonstrating one of the rare cases where failure to grasp an individual's point of view was beneficial, he is fond of telling the following story:

A little girl who had been playing in the street and carefully observing all the happenings in that busy neighborhood, came bounding in to her mother one morning with a happy smile on her face.

"Mamma, Mamma!" she exclaimed, "you know I never cared very much for our iceman, but I do think now that he's awfully nice!"

"Yes, dear," said the mother, "he's pretty good as icemen go. He's no worse than most of them when it comes to getting bits of ice and water on the kitchen floor. But what has happened all of a sudden that makes you so enthusiastic about him?"

"Oh well, mamma, an accident happened to him out in the street a while ago. He dropped a great big chunk of ice on his toes, but he never got mad at all. He just sat down on the curb and talked to God."

He offers his second best story which has to do with the teacher who could not get away from his schoolwork no matter if he was practicing his avocation:

Farmer Jones' son had been hired to teach for the winter term at the local school. After several weeks of pursuing his classroom duties he returned home one evening in time to milk the family cows. As he finished with the last member of the herd he arose with dignity and with an air of finality was heard to exclaim, "Class dismissed."

She Heard Him

It does not always pay a schoolman to retaliate when he believes that he is being corrected unnecessarily. A western principal told this story apropos of another schoolman who threatened to retaliate when criticized by a member of the school board:

A colored man failed to show up for work, which led the foreman to ask another workman the reason.

"Harry's in de hospital, boss. Ye see, he's been tellin' me ev're mornin' foh a week dat he's gonna lick his wife cause o' her naggin'."

"Yes?"

"Yessah, an' yeste'day she done ovahheah him, da's all."

Self-Reliance Necessary

Teacher: "And why should we endeavor to rise by our own efforts?"

Johnnie Wise: "'Cause there's no tellin' when the alarm clock will go wrong."



Very Thin Boy (to his father): "I say, Dad, you really must do something about my thinness. They marked me absent again this morning from school."—London Opinion.

THE MODERN PUPIL

I've had a new school teacher
Now for a week or two.
She seems to be quite clever,
And knows her subject, too.
She's pleasant and attractive,
As far as I can tell.
There's just one trouble with her.
She doesn't mind me well.

In fact, she has a notion,
Saved from a former day,
That things about the schoolroom
Should go the other way.
And so the one objection
That any one could find
Is insubordination.
I cannot make her mind.

—Clarence E. Flynn.

A SIGN OF THE TIMES

The Chicago Tribune in its Line O' Type column for November 23, contained the following verses apropos of the arrest of a storekeeper who sold bootleg liquor to high-school students:

SCHOOL DAYS

Brought Up to Date

School days, school days;
Dear old gin and booze days,
With whisky and high balls and old white mule,
Right 'cross the street from our big high school;
To the speak-easy we would go,
Passing so gently to and fro,
And we wrote on our slates, what we owed them, Joe;
When we were a couple of kids.

Then Mother Wondered!

Little Grace was having considerable trouble with her arithmetic problems and finally her mother helped her in order that she might not be late for bed. Next day, when little Grace returned from school, her mother asked rather anxiously, "Were all of your arithmetic problems correct, dear?" "No, mother, they were all wrong." "'All wrong?" repeated her mother quite amazed. "I'm very sorry, darling." "That's all right, mother," replied Grace, "you don't need to worry, because all the other little girls' mammas had them wrong, too."

Check the Proof

The teacher was delivering the final lecture of the term and dwelled considerably on the fact that each pupil should devote all of his spare time in preparing for the final examination.

"The examination papers," she concluded, "are now on the way to the printer. Are there any questions?"

For a while all was silent, then a voice in the back of the room timidly inquired, "What's the printer's name?"

Fair Warning

"I certainly will have to ask your father to come and see me," said the teacher to the little son of a physician.

"Don't you do it," said the boy.

The teacher thought she had made an impression.

"Yes," she repeated, "I must send for your father."

"Better not," said the boy.

"Why not?" inquired the teacher.

"'Cause dad charges three dollars a visit," said the scamp.

Why Not?

"A good chef gets more than a college professor."

"Why shouldn't he? A lot more people take his courses."—Boston Transcript.

If you want to be comfortable in this world keep a good conscience and an old pair of shoes.—Josh Billings.

A teacher was telling her class little stories in natural history, and she asked if anyone could tell her what a groundhog was. Up went a little hand waving frantically.

"Well, Tommy, you may tell us what a groundhog is."

"Please ma'am, it's a sausage."

Easy

Teacher was giving a lesson on the idiosyncrasies of March.

"What is it," she asked, "that comes in like a lion and goes out like a lamb?"

"Father," replied the smallest pupil.—Boston Post.

Professor: "I am afraid my lecture will have hardly any interest for you. It is on 'Sun Spots.'"

Young Thing: "How topping! You have no idea how I suffer from freckles."—London Opinion.



When the plans are drawn

Your architect will be interested in the suggestions of the L. B. Library Department Man. Your librarian will profit from his aid. But most of all your governing board will appreciate his wide and specialized experience. As building plans are drawn . . . questions of supervisory convenience arise . . . questions of wise utilization of space . . . questions of economical expenditure of funds . . . questions which he can answer — because somewhere, sometime he has answered them before.

Behind him are fifty years of intimate association with the American library. At his disposal are huge factories which for decades have built quality into technical library furniture. When your new library or school is in the blueprint stage, you requisition advisory service for which there is no counterpart as you talk with the L. B. Man.

He is near you now. Write or 'phone him at the most convenient Library Department headquarter point. Without obligation of yours at all.

Library Bureau

DIVISION OF

Remington Rand Business Service Inc.

Headquarter points of the Library Department

118 Federal Street	451 Broadway	214 W. Monroe Street	1200 S. Grand Avenue	39 Second Street
Boston, Mass.	New York City	Chicago, Ill.	Los Angeles, Cal.	San Francisco, Cal.

In 1950 -

Will 90% of YOUR plumbing fixtures be functioning perfectly? That is the record at Port Arthur after nearly a quarter century of service.

N. O. PRESTON, President
R. L. RUTAN, Vice President
Board of Trustees

G. M. SIMS
Superintendent
L. B. ABBEY,
Sec. Pub. Accnt.
and Bonded. Treas.

Port Arthur Independent School District

PORT ARTHUR, TEXAS.

November 6, 1928

The Bowlus Manufacturing Co.,
Springfield, Ohio.

Gentlemen:

Replying to your letter of October 25th:

We have a number of the Bowlus Jewel Automatic Water Closets in one of our schools that was erected in 1906. Two or three of these had to be replaced last year due to breakage.

We consider that these appliances have given excellent service.

Yours very truly,

L B Abbey

LBA:MLS

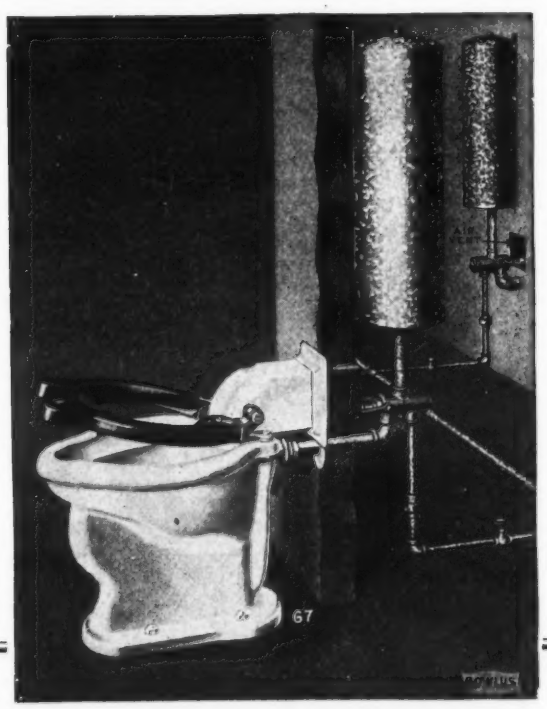
The JEWEL FLUSH VALVE

Stamina—Staying Power—the ability to stand up and function perfectly after long years of hard, rough, careless usage. That's the quality of Jewel Flush Valves that recommends them for school installation.

Every time the Jewel is used, a powerful, scouring flush of Water under Pressure thoroughly cleanses the bowl. *Every* time—because there is nothing in the Jewel Flush Valve to get out of order. It has no interior springs to rust, corrode or lose resiliency, no treacherous needle valves to need constant adjustment. Operating springs are in the seat hinges where they belong.

Investigate the most reliable seat-operating flush valve made. Learn why it is also recommended by leading health authorities as best capable of protecting the health of your children.

Write today for descriptive literature and endorsements from school officials, school architects, and others from all parts of the United States.



Many states now require the individual ventilation of every bowl, and Jewel Units especially designed with rear vent for use in Utility Room Installations are the choice of far-sighted architects and schoolmen. Reasonably low in price, remarkably low in maintenance cost, and backed by a positive five-year guarantee which it far outlives, the Jewel is a money-saving installation.

The BOWLUS MANUFACTURING CO.

Springfield · Ohio

600-610 East Main St.

ONLIWON PAPER TOWEL ONLIWON PAPER TOWEL ONLIWON PAPER TOWEL ONLIWON PAPER TOWEL

A paper towel must be absorbent . . . and it must stand the gaff

Tests show how new development can save 10% and up on your towel bills

ONLIWON PAPER TOWEL ONLIWON PAPER TOWEL ONLIWON PAPER TOWEL ONLIWON PAPER TOWEL

WET hands break through ordinary paper towels at once: the user takes from two to half-dozen to do the job. The problem has been combining the two essential qualities, strength and absorbency.

Now—a balanced formula

Today A.P.W. offers all users of towels a remarkable development. We ask you to test either the new Onliwon Kraft Towel or Onliwon Unbleached Towels in your own washroom. The long fibres of this remarkable paper are scientifically "laid" to give tensile strength *during actual use*. Without breaking, one Onliwon Towel wipes the hands *dry*.

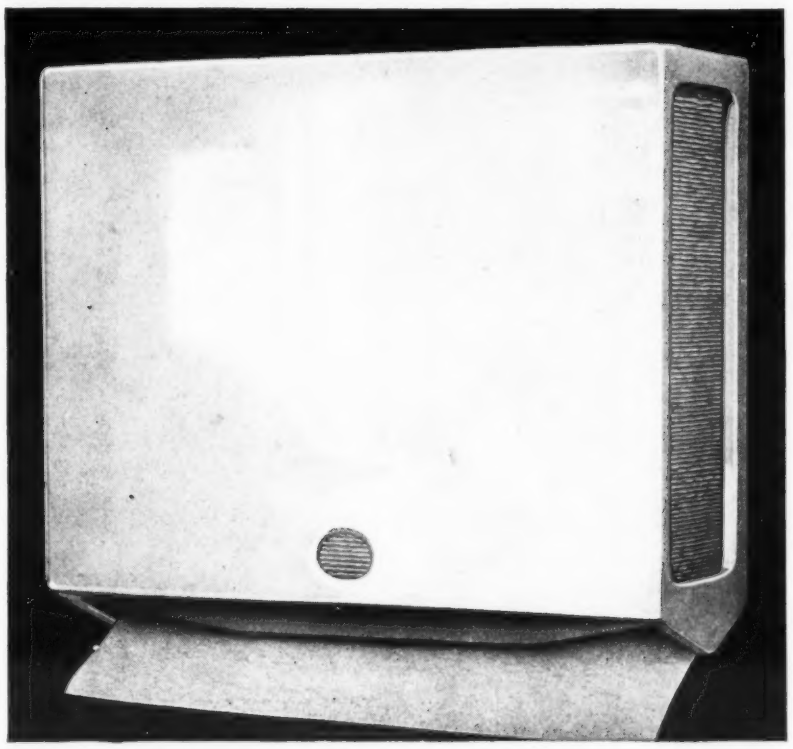
Onliwon Towels are made double-folded. The economy of this added drying power has been demonstrated in thousands of institutions for years.

Savings in every field

Facts and figures are the proof. "The Onliwon System has saved at the rate of 80% over cloth towels," writes the President of the Professional Building Corporation of Richmond, Va. In one year with this service, a large office building saved over $1000. A great automobile manufacturer uses Onliwon Towels at a cost of 14c per man per month. Let us send you actual comparisons.

You are buying towels—not cases

A case of Onliwon Towels contains up to 34% more drying surface than other brands. It weighs from two to seven pounds more. Dispensed one at a time, in standard Onliwon Cabinets, these remarkable paper towels will keep your towel costs to an absolute minimum.



Onliwon towel cabinet, solid white porcelain. Can also be supplied with nickel silver door.

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